

Amateur Radio



January 1998

Volume 66 No 1

Journal of Wireless Institute of Australia



See inside for the latest amateur radio news, information, and technical articles, including

- **A Three-Chip Electronic Morse Keyer**
- **The Clemens Match**
- **A VHF/UHF Signal Generator**

Plus *lots of other articles, opinions and special interest columns*

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If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with the Post Office before contacting the registered office of the WIA. ©

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Cover

A team of five WIA members attended the recent IARU Region 3 Conference held in Beijing, capital of China (see details in *WIA News* in the November and December 1997 issues of *Amateur Radio*). The LHS photo shows WIA team leader David Wardlaw VK3ADW (at left) "hamming it up on the Great Wall of China" with ARRL VP Steve Mendelsohn W2ML (photo by WIA President Neil Penfold VK6NE). The other photo (by Nanette Owen, XYL of IARU VP Michael Owen VK3KI) is of WIA Education Co-ordinator, Brenda Edmonds VK3KT, sightseeing in Tiananmen Square. Brenda travelled to support the WIA team at her own expense.

BACK ISSUES

Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society
Founded 1910

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David Wardlaw	VK3ADW
Neil Penfold	VK6NE

Editor's Comment

Changes in the Wind

Over the past year or so, we have not only received all kinds of advice from members as to how the WIA should be organised, but also how this magazine might be improved. One of the latter suggestions was that editorials like this are not what is required and are in the wrong place. It is even queried as to whether any editorial is necessary.

Much of this advice is very good and deserves to be followed in many cases. From my point of view, being inherently lazy, it would be much simpler not to have to write an editorial every month! This, incidentally, is the 147th "Editor's Comment" which I have written. Prior to Gil Sones introducing a regular editorial in 1983, which I inherited from him in 1984, editorials were irregular and came from various sources. So I feel sure that my 147 is an unchallenged record!

One form the editorial ought to take from time to time, as it once did several times a year, is as a vehicle to tell you, the members, what is being planned or done by the Federal Council. This has been known as the "Federal QSP" but has not been provided for a long time. Part of its function has been taken over by "WIA News", and last month we had a long letter in "Over to You" from the Federal President in response to members' comments or questions. Something like this should be a more regular feature. "Guest Editorials" from notable members are also worth re-considering.

Many other changes to *Amateur Radio* have been suggested, which I do not have space to mention. Suffice to say, that in this issue, the first of a new year, there have been a number of changes. I hope they meet with your approval. You might even be so impressed as to show a non-member what he/she is missing, thus maybe adding to our numbers. More than any other thing, the most effective way of improving amateur radio in Australia is to persuade more amateurs to join the WIA.

Bill Rice VK3ABP
Editor

ar

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for *Amateur Radio*", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

■ Comment

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Response to Contest Comments

I would appreciate the opportunity to reply to the comments on VHF contests made by Adam Maurer VK3ALM in the December issue of *Amateur Radio*.

Adam asked why there is a rule banning contest activity on calling frequencies if it is

not enforced. The answer is that it is not easy for one person to monitor all calling frequencies all the time and hear everything that happens on them - but I will try and do better next time. Nobody has ever sent me a log of stations they may have heard breaking the contest rules.

Adam also said that he is still waiting for the courtesy of a reply to a letter he sent me

two years ago. Thanks a lot for your courtesy, Adam. You've had two years to contact me and find out what happened with your letter - but you choose to write to *Amateur Radio* instead. Are you serious, or are you just interested in grandstanding? Send me a letter and I'll reply to it.

I agree totally with Adam's comments on people who "exhibit a total disregard for band plans and peaceful coexistence". I look forward to the day when he acts on this principle and checks the two metre band plan. It would be a step forward for peaceful coexistence if there were one less station running FM in the 2 m SSB segment.

John Martin VK3KWA
C/o PO Box 2175
Caulfield Junction VIC 3161
ar

■ WIA News

Roger Harrison VK2ZRH, Federal Media Liaison Officer

Amateurs Breathe Sigh of Relief as WRC-97 Ends

Early reports, following the end of the 1997 World Radio Conference (WRC-97) in Geneva, indicate that the Amateur Service has pulled through largely unaffected, despite moves by the emerging "Little LEO" satellite industry to share amateur VHF-UHF bands. Little LEOS are a class of small satellites in low-Earth orbit, designed to provide non-voice mobile communications services.

However, resolutions agreed at WRC-97 set the scene for a further hunt for spectrum by the Little LEO industry in preparation for WRC-99. The 1999 World Radio Conference will also decide where frequencies for the Earth Exploration Satellite Service (EESS) synthetic aperture radars (SARs) will be placed in the 420-470 MHz range. These radars are to be used for mapping the Earth's surface, and this frequency range

is said to be able to penetrate rainforest and highlight other features.

The existing secondary EESS allocation at 1215-1300 MHz has been upgraded to primary (Australian amateurs share 1240-1300 MHz on a secondary basis with radiolocation). This move, it is understood, will have only minimal impact on amateur operations and reduces the likelihood that other, less-compatible services might be introduced to the band, as has happened at 2300-2450 MHz in Australia.

Amateur satellite segments escaped being ravaged by allocations for wind profiler radars. Only one world-wide primary allocation was made, at 1270-1295 MHz. This does not impact amateur satellite or weak signal segments on the 13 cm band. Wind profiler radars are located adjacent to

airports and other aircraft landing fields. They 'fire' vertically to provide warning of certain dangerous wind conditions. Horizontal propagation is severely restricted to obviate interference to other users beyond the immediate vicinity of their location.

A significant win for the Amateur Service at WRC-97 was the passing of a resolution encouraging countries' regulatory administrations to facilitate the use of amateur radio and other "decentralised means of communications" for disaster mitigation and relief operations. This resolution eliminated the need for the previous 'Resolution 640', which defined how certain specific amateur bands could be used for international disaster communications by non-amateur stations. So now, Resolution 640 is no longer in effect.

More European and other Region 1 countries will be heard on 160 m in future following the deletion of footnoted exceptions to the international table of frequency allocations in the 1810-1830 kHz range. Region 3 escaped new restrictions to some amateur bands when Korea was persuaded to drop its move to have exceptions footnoted in the

allocations table for this region which would have affected a number of bands.

Consideration of the definition and qualification for the Amateur Service, Article S25 of the International Radio Regulations, has been postponed from the agenda of WRC-99 to be placed on the preliminary agenda for WRC-2001. Article S25 concerns the definition of the amateur and amateur-satellite services

and the necessary qualifications required for licensing, including the Morse code requirement for operation on bands below 30 MHz.

Likewise, the proposal to 'harmonise' the 7 MHz amateur band to provide a world-wide, common 300 kHz segment has also been postponed to the preliminary agenda for WRC-2001.

A total of 1801 delegates from 142 countries attended WRC-97, which was

chaired by Roger Smith from the Australian Communications Authority. The WIA's representative on the Australian delegation was Dr David Wardlaw VK3ADW. International Amateur Radio Union Vice President, Michael Owen VK3KI, participated with a multinational team attending for the IARU. Thanks to the ARRL Letter of 26 November, 1997.

[Released 1/12/97]

Spectrum Hunters Target 70 cm

The 70 cm band is being eyed-off by the Radio Site Owners and Users Association (RSOUA), a lobbying body of 23-24 Australian organisations which run land mobile VHF-UHF sites and trunked radio networks.

The RSOUA's interest in 70 cm was sparked by a recent paper on trunked radio systems, produced by a working party of the Radiocommunications Consultative Council (RCC), which represents radio frequency users' interests to the Australian Communications Authority (ACA). The paper canvassed the likely demands for new spectrum at 1.8 GHz, 800 MHz and 900 MHz, as well as the 380-400 MHz and 420-450 MHz bands.

The RSOUA's November newsletter suggested that members who believed the 380-400 MHz and 420-450 MHz bands "may get the go-ahead from its present users and the ACA," for spectrum licensing should launch a major lobbying effort.

"Most of these bands are used by the Defence Department (DoD), which is known to be a tenacious holder," the newsletter said, adding that some is held for CB and amateur radio use. While they were off the mark with CB, which has 476-477 MHz, amateurs share 420-450 MHz with radiolocation as the prime service, largely used by defence. However, 420-430 and 440-450 MHz also have fixed and mobile as secondary services, again, licensed by the defence forces.

The RSOUA newsletter noted that, "Amateurs maintain very effective lobbying. They recently gained a reduction in fees shortly after new fee structures were mooted," giving clear

recognition to the WIA's licence fee campaign effectiveness.

The WIA's ACA Liaison Team has moved to seek out background information from the RCC, and other sources, and to canvass likely support

from the Department of Defence, the major licensee with whom we share 420-450 MHz.

More news of developments will be published as information comes to hand.

[Released 29/11/97]

Wealth of Information for 10 m, VHF and Packet Enthusiasts

The 1998 *Australian Radiocommunications Reference Guide and Radio Amateurs' Call Book* contains a wealth of information for those interested in 10 m, VHF and packet radio, never before published in one place.

Between the bright yellow covers, 10 m-band stalwarts will find all 170 of the world's 10 m band beacons listed in frequency order. Their locations are tabulated, along with the grid square locator, where known, along with mode, power and antenna details. There are also 186 10 m repeaters listed, by country and frequency.

For 6 m-band fans, the world's 150 known beacons are listed, in frequency order, along with location, grid square locator and modulation mode.

As solar cycle 23 is on the rise, and there's already some action happening on these exciting two bands, the 1998 *Radiocommunications Reference Guide and Call Book* is a 'must have' publication for the shack.

Also listed for the first time are details of the 39 New Zealand VHF-UHF

beacons. Way down the other end of the spectrum, if you're becoming interested in the Low Frequencies, there are more than 300 LF beacons between 200 and 400 kHz listed, located around Australia and New Zealand. This will help you get cracking on that LF converter to see what you can hear.

For the packet enthusiast beginner or 'old hand' - there's a wealth of useful data and other material. For those just looking into amateur packet radio for the first time, there's a useful guide to how to get started. If you've been on packet a while, packet 'wormholes' are explained. And for all and sundry interested in amateur packet radio, there's a full directory of all 236 known packet radio system stations throughout Australia.

Priced at \$14.95, or \$13 to WIA members, the 158-page 1998 *Australian Radiocommunications Reference Guide and Radio Amateurs' Call Book* is available through your local WIA Division, or Dick Smith stores.

[Released 1/12/97]

A Taswegian Wins October's Multimeter

Tasmanian Division new recruit, Mr R W McCulloch VK7MGW of Burnie in the island state's north west, has won the Fluke 12B digital multimeter in the October prize draw.

Every month throughout 1997, there was a draw from among new WIA recruits joining each month. December was the last chance to join the WIA and go in the monthly draw to win a Fluke 12B digital multimeter.

The 12 prizes for the year have been generously donated by Philips Test & Measurement. Fluke is the world's pre-eminent manufacturer of digital test instruments.

The Fluke 12B, worth \$195, measures

AC and DC voltage (with auto-selection above 4.5 V), resistance, and capacitance from 1000 pF to 1000 µF. The instrument features a simple rotary dial, a 4000-count liquid crystal display, and diode and continuity testing. Its "continuity capture" feature indicates intermittent open and short circuits. It comes with test leads and a two-year warranty.

Membership recruitment advertisements appeared in each issue of *Amateur Radio* magazine, and in *Radio and Communications* magazine throughout 1997. Membership recruitment and renewal advertisements also appeared on WIA Divisions' World Wide Web pages on the Internet.

Christmas-New Year Break For WIA Federal Secretariat

The Melbourne secretariat of WIA Federal closed for the Christmas-New Year break on Friday, 19 December 1997 and will re-open on Monday, 19 January 1998.

The WIA Exam Service advised that amateur examination papers for marking which were received in Melbourne by Monday, 8 December were posted to candidates before Christmas.

Any exam material, or orders, received from invigilators after 8 December cannot be dealt with until after Monday, 19 January 1998, unfortunately.

[Released 18/11/97, updated 1/12/97]

AX for Australia Day

In celebration of Australia Day, all Australian amateurs can substitute the 'AX' prefix for VK during the 48 hours (local time in each State) of the Australia Day weekend of 24-25 January 1998.

Use of the AX prefix is optional. The decision is up to each amateur.

This concession for the use of the special event AX prefix was first granted in 1997, following a successful submission to the then regulators in late 1996, the Spectrum management Agency, now part of the Australian Communications Authority.

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OUR NEW FLAGSHIP ARRIVES!

What a great way to kick off the new year. Icom's new IC-746 delivers 100W on HF, 6m, & 2m at a much lower cost than its predecessor, the IC-756. This is the perfect shack unit to compliment the IC-706 MKII mobile. Be sure to see our new flagship at your nearest authorised Icom dealer.

NEW HAND-HELD TRIBAND COMING SOON.

The goodies keep coming! Watch out for Icom's new IC-T8A Triband transceiver (2m, 6m, 70cm). If you liked the IC-T7A or the IC-Delta 1A then you will love this new unit and its price!

WYONG HAMFEST COMING UP SOON.

Always a well attended event, the Wyong Hamfest promises to be a must-see in '98. It's on again in late February, final date to be confirmed so watch this column.

"...73"

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■ News

WIA Divisions

Forward Bias - VK1 Notes

WICEN Leads to Sleep Loss

A shorter column this month as, like many of our local amateurs, I am suffering WICEN/Rally induced sleep deprivation.

The WICEN exercise that was held this weekend (29-30 November), in conjunction with the FAI Rally of Canberra, was an unqualified success. My heartfelt thanks go to all those who participated, in some cases at short notice, and braved early mornings, hot weather, dust and smoke over the weekend.

I'd also like to acknowledge the efforts of Paul Tams VK2CJ, Simon Trotter VK1AUS and Phil Longworth VK1ZPL in organising so much of the logistics and personnel. The efforts of Bernie VK1KIP, Scott VK1HAM and Maria VK1TBA at headquarters are likewise appreciated. It was a pleasure to work with everyone involved.

I had the opportunity to speak with a couple of the officials who attended the rally in the role of observers. Their comments were very positive and they rated WICEN's efforts as amongst the best in the world. These officials travel to events the world over and such a rating attests to the high level of professionalism amongst our local operators.

It was pleasing to speak to a number of competitors after the event and catch their enthusiasm for a sport that they enjoy just as much as we do our hobby. They, too, are thankful for the efforts of all those who assist and are quick to acknowledge they could not participate in the sport without those same volunteers. WICEN and amateur radio operators in general are well known and highly thought of by those that compete and who appreciate the contribution we make to the pursuit of their sport.

Coming Events

The January meeting will be held on the 19th of the month to clear Australia day. Our AGM will be held on 23 February and there's still time to nominate for a role on the committee should you so wish. We'll have refreshments and a chance for a chat at both; look forward to seeing you there!

Hugh Blemings VK1YYZ

VK2 Notes

New Year and New Resolutions

I guess you will be saying how predictable to be starting off the VK2 Notes for January

with this title, but it is important that we set our goals for the next 12 months. The current board of directors has been very busy over the past year and will continue to do so in 1998 in the interest of the members of the WIA. We wish you all the very best for a prosperous and healthy 1998.

What Do You Have Planned For This Year?

Well, blow me down, I can almost hear the 'I Dunnos', the 'I will try to survives' and 'the Doers'. Mixed bunch, of course, but they say it takes variety to make everything work. It has always interested me how many people enjoy the hobby of amateur radio, but never quite have enough time or the opportunity to give back to the hobby. I trust that this year, however little or large, that you continue to do your bit for amateur radio.

My resolutions this year were for more time with my wife and four-year-old darling daughter, peace, plenty of time to read and listen to serious music, in about that order. But what about ham radio? Well, that comes in many forms. I love DXing and CW and doing my bit for the WIA and the occasional rag-chew, but what I like most about ham radio is the feeling that comes of being with people of like mind and knowing that, in years to come, I will have those people of like mind to share my hobby. It is very important to me.

Only trouble is that we are all getting older. Who is going to take over our spots in the shack when we go? My answer is young people. Yes, it is very important that we move now, right now, to show to the younger generation that the hobby of communication is full of things like satellites, computers, digital transmissions and, most of all, people who share a common goal, that of experimentation. Along with all the other Divisions, the VK2 mob realises that education and assistance are the keys.

This year we will be working to encourage the growth of amateur radio and the membership of the WIA. We will be helping the younger generation with our brand new courses designed to introduce people to the theory and practice of the hobby and help them to pass their examinations in order to enable them to get their tickets. My hope is that you, too, wherever you are in VK, will be doing the same.

Just a reminder that the VK2 Division, in conjunction with Graeme Scott VK2KE,

now have a new Novice Course available, along with a bridging course to the AOC. Enquire at the Divisional office at Parramatta.

If there is anything you think we should be doing for you as Divisional representatives, please let us know. We would be only too happy to consider your thoughts and ideas; after all, you are the members we are to serve.

Affiliated Clubs Conference

The Affiliated Clubs Conference of the VK2 Division was held on Saturday, 15 November 1997 with an excellent attendance from all areas of the state. The delegates appeared to enjoy themselves and many positive issues of importance to amateur radio in VK2 were discussed. Most of all it was very good to see that, for this conference, the number of clubs sending delegates had increased, which shows a healthy interest. We even signed up a couple of new members on the day. Thank you all for attending. In future issues of *Amateur Radio* we will look at some of the things discussed.

VK2 Divisional Office Re-opens Soon

The Divisional office of the VK2 Division at Parramatta will re-open on Monday, 12 January 1998. The Sunday broadcasts will recommence on Sunday, 11 January 1998. So, see you soon.

E-mail Address

If you are addressing e-mail to the office, please do so at vk2wi@ozemail.com.au.

If you would like to contact the VK2 Division regarding your hobby, please do not hesitate to contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor, just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page.

Next month

Next month we'll have more to report but, if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777 or by e-mail to dthom@penrithcity.nsw.gov.au

David Thompson VK2NH

VK6 Notes

Council Meeting

The main event for January will be the monthly meeting on the third Tuesday which will take the form of watching the Council in action and having the chance to interact with it. This could be an interesting Council meeting as it will be leading up to considering matters for the Federal Annual General

meeting on 28 March (please note: agenda items for the Federal AGM will have to be forwarded before the end of February!).

By January we should also know the result of a postal ballot on a motion which has been submitted by the WA Division seeking a clear process for nominations for key positions such as President, Directors, Auditor and Federal co-ordinators. This process is aimed at having names and statements about the candidates in the hands of Divisions well before the AGM rather than having names appear at the meeting itself. This will be a more informed and democratic process.

From the Minutes

Minutes of General Meeting 18th November, 1997

The meeting commenced at 2000 with a presentation by Rod Green VK6KRG on the subject of Printed Circuit Board Manufacture. The meeting proper commenced at 2030 with the President, Wal 6KZ calling for a period of silence in memory of Mal Saw VK6SM, now a Silent Key. Visitor Michael DL2OBO (VK6BPT) was welcomed to the meeting.

October Minutes

1. Considerable discussion ensued about the Hamfest. VK6NE suggested that Council write to the NCRG with suggestions for changes next year, which included a better position for the WIA and possibly some means of identifying those who attended, such as a visitor book and/or making available simple self-prepared name tags. (Action: Council)

2. Wal VK6KZ reported that comments on the Federal Budget had been forwarded but no response had been received.

3. The future of monthly meetings is still under consideration.

November Council Meeting Minutes

1. The Secretary advised that 50 survey forms had been returned so far.

2. Don VK6HK spoke about concern that the ACA's proposal for EMR sticker approval for all handheld equipment could be a threat to the traditional right of licensed amateurs to build and modify their own gear.

3. Wal VK6KZ referred to the proposal to hold a Conference of Clubs early in 1998. Views on this proposal were being sought from 27 VK6 clubs that had been identified.

4. Will VK6UU advised that the ACA regulations were available on the Internet, but not in full from the local ACA office. Will pointed out that some of the material was not accurate and out of date, and suggested that the WIA should lodge a complaint with the ACA about this misleading material. (Action: Council)

Broadcast

Wal VK6KZ confirmed that Tony VK6TS

is to enter hospital this week and that Mel VK6TVA would continue to act as Broadcast Officer. Thanks were recorded to Mel.

WICEN

Jim VK6JP reported that communications for Rally Australia were successful; also that the WICEN meeting venue would no longer be available from December as SES were upgrading security.

Morse Training

Barry VK6AF reported that the manual Morse sessions on 80 and 2 m on Tuesday evenings were continuing and appeared well received.

WARG

Will VK6UU advised that from 30 November the 6800 repeater at Tic Hill would require a 123 Hz CTCSS tone for access. This was an attempt to overcome false triggering of the repeater and to educate users to the probability that all repeaters may eventually have to have this facility due to rising interference levels.

WAADCA

Gwynne VK6JG advised that VK6DLX was at present out of service due to a change of location of the service provider.

Technical Training

Gwynne VK6JG outlined his initiative in setting up a Technical Training Course for

1998. The course will be held at Tresillian Centre in Nedlands on Mondays, 7.30-9.30 pm and will run for 30 weeks. It will be practically oriented and will take students to the Unrestricted Theory level. Interested parties should contact Gwynne on 9386 2542, e-mail at brockis@cygnus.uwa.edu.au or packet at VK6JG@VK6BBR. The cost will be \$15-\$18 to become a member of Tresillian and \$60 course fee. A text is not mandatory, but a suitable reference is available from the RSGB for about \$30.

A Bit of Fun!

VHF-UHF activity should be at a high level with the Ross Hull Contest being underway during the month of January.

The 10 m FM repeaters will also really be on song. The signal strengths on this band are astonishing. Even now as I write at the end of November, I have been enjoying many contacts via Brisbane, 29.660 Rx/29.560 Tx and, especially well received here in WA, the Darwin repeater on 29.680 Rx/29.580 Tx. Propagation has been best between about 11.00 am and 3.30 pm local.

New 2 m Beacon

A new 144 MHz beacon has commenced service from Esperance in Western Australia. Details are: Callsign, VK6REP; Ident

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

420-450 MHz is wanted by Australian commercial interests

RF emission regulations threaten handhelds, mobile rigs, and suburban home stations, with bureaucratic limits

More of 7 MHz is wanted by global broadcasters

RENEW YOUR MEMBERSHIP RECRUIT NEW MEMBERS

WIA action has: ■ cut the cost of licence fees, ■ cut fees on beacons and repeaters, ■ improved licence conditions, ■ retained access to 50 MHz and 576 MHz, and more.

The WIA maintains representation at World Radio Conferences, and at home, to the ACA and on the Radio Communications Consultative Council. Strength in numbers. Subs help pay.



YOUR HOBBY

YOUR VOICE

"VK6REP PF06 <10 sec key down>"; Mode, FSK key down HF, key up LF with about 800 Hz shift, frequency (key down) 144.568 MHz; Tx Power, 15 W; antenna, dipole with radiation E-W; and operation, continuous.

The beacon has been received in Perth on several occasions. It is expected that the transmission will provide another point of reference in the continuing investigation of the propagation across the Great Australian Bight.

The beacon is a joint project by Bill Hockley VK6AS and the West Australian VHF Group. Any reports to Bill VK6AS at Esperance. [Thanks to Don VK6HK for this info.]

CTCSS on Amateur Repeaters?

[from Chris VK6KCH]

The Repeater Group (WARG) is seriously considering introducing CTCSS decode facilities to its repeaters, especially those on 2 m. This is in response to the growing problem of interference bringing the repeater's transmitters on throughout the day, thus making prolonged monitoring of the repeater a test of patience!

Before you complain, do you know what CTCSS is? It stands for Continuous Tone Coded Squelch System, and it is pretty simple. It involves mixing a continuous low-level, low-frequency audio tone (between 67.0 Hz and 250.3 Hz) onto your transmitter's modulator, along with the normal modulation. At the remote repeater site, a CTCSS decoder detects the presence of such a tone on the incoming audio, and concludes that what it is hearing is a valid signal, not interference, and should therefore be retransmitted.

That's it! No magic, no computers or secret codes. Just a tone.

Will VK6UU has described how to build a simple CTCSS encoder in previous issues of *Amateur Radio*. The most basic design uses two transistors and cost about \$2. Better designs are crystal locked, hence giving superior frequency stability over an RC-based design (typical tolerances are +/- 0.5% of nominal frequency). Commercial off-the-shelf encoders are about \$40 to buy, and full encoder/decoders are about \$80.

I made a few quick enquiries as to add-on option boards for amateur products, and they seem to consistently come in at \$100, giving encode and decode which is nicely integrated to the amateur rig. Whichever way you look at it, it is probably an over-reaction to throw your old rig out!

WARG being a crafty mob, it is unlikely that CTCSS will be implemented on the 'normal' commercial lines anyway ('normal' meaning that if you don't have the right tone

on your transmission, you don't get to use the repeater!). Instead, WARG is looking at innovative ways that will continue to allow old non-CTCSS equipment to access the repeater, whilst still reducing the incidence of false-triggering from interference sources.

Would you like help in adding CTCSS to your existing rig? Drop in on WARG's weekly on-air meeting on 146.750 Lesmurdie, at 10.30 am, each Sunday.

DX on 29 MHz Gateway

Perth stations continue to have fun working stations via the 29.120 MHz gateway on the Lesmurdie repeater (146.750). VK2, VK4 and even VK6MM/M across the Nullarbor have been worked. At the moment, stations on 10 m only need to come up on FM on 29.120 (no need for CTCSS). Stations on 2 m need to have an 88.5 Hz CTCSS tone on their transmission to cause the 29 MHz transmitter to key up. If you've got CTCSS, why not set your rig to run 88.5 Hz as default on 146.750, thus allowing DX stations to hear your transmission?

One word of caution! Novices and Limited Novices are not allowed on FM on 29.120, hence they are prohibited from encoding the 88.5 Hz tone on to their signal. So don't!

Contact Info

If you have anything coming up that you wish to put the word out on, please contact Chris on e-mail at vk6kch@amsat.org; packet at VK6KCH@VK6BBR.#PER.#WA.AUS.OC; or me, Chris Lowe VK6BIK (when I get back from my Scotland jaunt in February) on e-mail at chrismor@avon.net.au; or PO Box 838 Toodyay, WA 6566; or 08 9574 4060.

Chris Lowe VK6BIK

"QRM" News from the Tasmanian Division

Divisional AGM Confirmed to be in Launceston

The Divisional Council, at its regular quarterly meeting, confirmed that the 1998 Divisional Annual General Meeting will be held in Launceston. The venue will be the northern campus of the University of Tasmania at Newnham and the date is Saturday, 21 March. The Northern Branch has been arranging this and already interest is building up to this event. So please, mark your calendars and plan to be there.

There will be trade displays and a home brew competition, as well as other activities in the pipeline before and after the AGM, including some for the ladies in the afternoon.

In the evening, the Northern Branch will host an Annual Dinner, an institution that,

unfortunately, had lapsed. Again the venue will be the University campus, in the bistro. It will be a buffet meal, and Divisional Council is planning to have a prominent guest speaker. There will be entertainment during the evening, one of the performers also being a ham.

So come along and join your fellow hams for a great weekend.

Contact the Northern Branch at PO Box 275, Launceston to book in for the Dinner ASAP.

November Council Meeting in Launceston

Divisional Council met on 22 November in Launceston's "Original Pizza Pub". In attendance were VK7RN, VK7BE, VK7FB, VK7RH, VK7ZAX and VK7ZDJ. Apologies were received from VK7GL and VK7JK. Observing the meeting was VK7TIM from the North; and VK7AN also popped in to brief Council on AGM arrangements.

Council will be promoting the WIA by circulating all the hams in VK7. It was decided that a repeater fund will be established and respondents will be asked to nominate the repeaters to which they wish to give donations. Membership badges are currently being sought from various suppliers. An announcement on how these can be obtained will be made via the broadcast; they also can be ordered from your branch secretary.

A suggestion was made to reinstate the broadcast roster so that VK7WI could be originated from the North, South and Northwest. The idea would be to have monthly rotations. However, as there are minor complications holding this up, discussion was held over to the next meeting.

Northern Repeaters May Permanently Close!

The November monthly meeting of the Northern Branch decided that, if funding for the two branch repeaters was not forthcoming, they would be permanently closed down.

The two repeaters are on separate sites and give good coverage over the northern half of Tasmania. VK7RAA on Mount Barrow is in need of an overhaul of its antennas. The recent imposition of annual site fees by Air Services Australia of \$633, and a diminishing cash flow, has forced the Branch to issue this ultimatum to users of both VK7RAA and VK7RAB. Already the Branch has appealed to Divisional Council for assistance. This will be further considered at this month's Council meeting.

In the meantime, repeater users are invited to contribute to the continuing operation of VK7RAA/VK7RAB. Already we have

received some donations; so, if you want to see these repeaters continue, please forward your donations to the Treasurer, Northern Branch, PO Box 275, Launceston TAS 7250. All donations will be acknowledged.

Ben Lomond An Ideal Repeater Location?

Ben Lomond, which is just south of Mount Barrow and about 1,000 feet higher, has long been suggested as a possible repeater location. It is also a popular winter ski field.

At present there is a very temporary CB repeater close by. However, this is primarily for the use of search and rescue, and CB use is secondary. Some hams have longingly looked at Ben Lomond as a possible repeater site, yet there are complications, which seem insurmountable, to the installation of a repeater. One, it is a National Park; two, there is no hydropower on site; and three, is the question of access.

If you have ever travelled up Jacob's Ladder, especially in winter using four wheel drive in chains, you will know what I mean. Solar power also seems out as it is very cold there and Old Ben is often obscured in cloud. It therefore does not seem practicable, although wind power is a possibility. However, the cost of this would be prohibitive. So Ben Lomond seems to be beyond our reach for the time being.

Northern Branch Meets at Scamander.

There is going to be a Social Day on Saturday, 10 January at the QTH of Paul VK7KPG at Scamander. It is at 24 Targett Street and commences from 10.00 am. All are welcome. Oh, and don't forget the sunscreen! Last year I became burnt from the sun and bitten by mozzies.

January Happenings

The Southern Branch won't be holding a

monthly meeting on 3 January, yet the regular Wednesday afternoon sessions will be continuing at the Domain Activity Centre, VK7OTC, from noon till 4 pm.

The North-western Branch will be meeting on 13 January at the Penguin High School, Dial Road, Penguin from 1945 hours.

The Northern Branch will hold a general meeting at Scamander at the social day on Saturday, 10 January and it will be held at approximately 1400.

Divisional Council will be meeting on 31 January on the Northwest coast at a venue to be advised. This will be the final Council meeting prior to the AGM. Don't forget that Branch's AGM will be held next month.

That is all for January. Have a safe time if you are holidays.

Robin L Harwood VK7RH
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News

Club News

GARC (Geelong Amateur Radio Club)

As part of the Geelong Amateur Radio Club's 50th anniversary celebrations next year, we have been successful in securing the commemorative callsign VI50G (that is, Victor India 50 Golf).

We have the callsign for all of 1998, and we plan to hit the road running with it on New Year's Day. We will, of course, be using the callsign for the VHF/UHF field day in January, as well as in many contests throughout the year. Additionally, we will be planning a roster of operators to ensure that the callsign gets as much exposure as possible, on every band and mode we can muster.

There will be a special QSL card produced, and we aim to QSL 100%. Currently we have a couple of members working on the production of cards (especially on funding them!). We didn't start this until we were sure that we had the callsign, of course.

Chas Gnaccarini VK3BRZ

North East Radio Club

The North East Radio Club was formed in early 1990 by a group of adult students attending an AOCF theory course run by the SA Division of the WIA each Saturday morning. At the time there were no radio groups located around the north eastern suburban areas of Adelaide and,

consequently, the club has grown rapidly since its inception.

A committee was formed at the inaugural general meeting to manage affairs with the intentions of providing and fostering friendship, help and education among the local amateur radio community. This has been well accomplished to date and an indication of this has been reflected in the excellent attendance at general meetings. They are held every second Friday in the month at the Ardtornish Primary School in Saarinen Avenue, St Agnes commencing at 7.30 pm. Excellent safe car parking facilities and a very comfortable venue are provided.

A great variety of talks, demonstrations and other practical exercises, generally related to electronics, are programmed from month to month. Visitors are always very welcome at these meetings.

Rick Grivell
President NERC

Sunbury Amateur Radio Club Inc (SARC)

I have been reading the articles in *Amateur Radio* about the Internet and the concerns expressed on the in-roads it may be making on the hobby of amateur radio. These articles started me thinking and I have come up with a discussion paper on how we can promote amateur radio on the Internet with a Club Directory.

The discussion paper can be found at

<http://www.ozemail.com.au/~vk3dvo/> For those who can't arrange access to the Internet to get a copy of the discussion paper, you can write to my address (it's in the Call Book).

The SARC have also put together a Club Page and published it on the Internet. It can be found at <http://www.ozemail.com.au/~vk3dvo/sarc/>

Ian Morris VK3DVO
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WIA News

UK Amateurs Getting 136 kHz, Giving Up 73 kHz

Further to the November *WIA News* announcement (page 6), the Radio Society of Great Britain (RSGB) reports that Full Class A licensed amateurs in the UK will shortly be able to use 135.7-137.8 kHz, the same as the new European allocation recommended by the CEPT.

The UK's 73 kHz band will now be phased out on 30 June 2000, extending the original deadline by six months. UK amateurs can still get permission to operate on 73 kHz up to 30 June 1998, six months later than the original deadline of 31 December 1997.

[Released 1/12/97]

■ Keyers

Three-Chip Electronic Morse Keyer

Drew Diamond VK3XU
45 Gatters Road, Wonga Park VIC 3115



The three-chip electronic keyer in its case.

If you enjoy using CW Morse, and have been on the look-out for a good, simple, easy-to-make-and-use electronic keyer, then this could be the one. The circuit originally appeared in *Electronics & Wireless World* back in June 1986, and was contained in a paper by Jim Owens, W5JQE (Ref 1). It came to my attention through an article by Ian Smith VK8CW in the pages of *Lo-Key*, journal of the VK CW Operator's QRP Club (Ref 2). Not needing another keyer, I built it up anyway – just for fun.

This circuit simply “wants” to work, and does everything claimed of it in Jim's original paper. The only thing lacking was a sidetone monitor, which I have added. I also made two or three small changes, including relay interface rather than solid state, for reasons which will be explained later. Features include:

- Instant starting, with uniform length of dots and dashes;
- Self-latching and self-completing dots and dashes;
- Mark-space 50% on dots, and 75% on dashes, with provision for some

manual adjustment of duty-cycle (weight);

- Uniform spacing between dots, dashes, and dashes and dots;
- Very good immunity to strong RF fields;
- Keys any polarity, at up to 1 A, 100 V;
- Speed range from about 10 WPM to 40 WPM;
- Internal sidetone monitor;
- Low parts count, printed circuit board construction; and
- Readily available components.

Not a bad list of features for just three ordinary chips. What we don't get is frills such as iambic keying and message memory. It has been argued that iambic style keying only comes into its own at high speeds. What we do get is a keyer which is a delight to use, and helps to make CW operating even more of a pleasure than it already is.

Circuit

The first two NOR gates of U1 are connected in a loop to form a clock

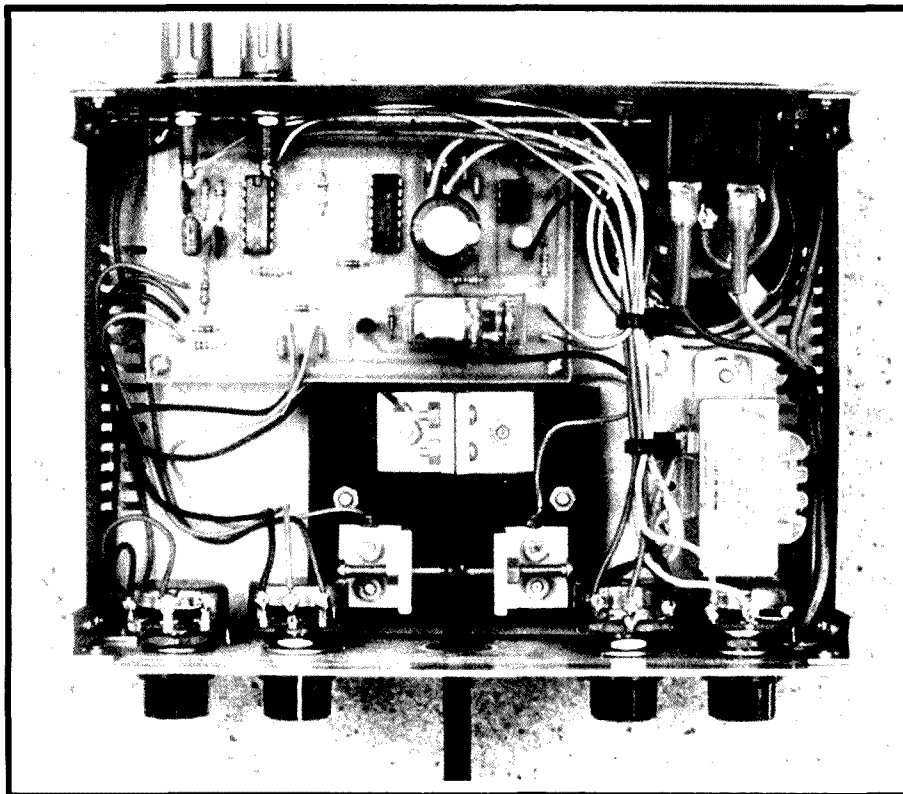
oscillator. When the dot paddle is closed momentarily, a logic low is applied to pin one which, by inversion, generates a high at pin three. A low therefore appears at pin 4. Resistor R1 couples this low back to pin one. R2 plus R3, in time-constant with the 0.47 μ F capacitor C3, will hold pin four in the low state until R2 plus R3 and C3 have gone through their discharge/charge cycle, and have returned to their original quiescent state.

The pulse thus generated is “self-latching”, and self-completing, regardless of the brevity of the dot contact closure. If the dot contact is held closed, the clock produces a uniform string of square-wave pulses. Potentiometer R3 alters the time-constant in order to give a speed adjustment. In this iteration, range is from about 10 to 40 words per minute.

Some adjustment in mark-space, or weight, is provided by R8. At the negative end of its travel, dots (or dits) will be heavier, up to 53% make, and at the +9 V end, they will be light, down to about 43%, with correspondingly weighted dashes.

When the dash contact is closed, a low is applied via D1 to pin one of the clock, which is enabled. At the same time, a low is applied to Reset pin four of U2, a D-type flip-flop wired to divide by two, thus out-putting a high at Q pin one which, when NORed with the dot on pin eight of U2, produces an inverted dash pulse at pin 10 three times as long as one clock pulse (or dot). The fourth NOR gate of U1 provides a simple invert function to source current into the base of Q1, which turns on, thus operating the relay. The contact of the relay keys the transmitter in the normal way. The high at pin 11 of U1 also enables the '555 timer, wired as an astable multi-vibrator to produce side-tone monitoring (and also off-air practice).

Most of my rigs are “positive keyed”. That is, the potential of the keyed circuit is ‘positive with respect to earth (or ground) when the “key” is open. When the key is closed, it must “pull” this potential to earth to key the transmitter on. As far as I know, most recent transceivers are positive keyed. However, there may well be a number of rigs still in service which key a negative line to ground.



Internal view of the keyer showing the paddle assembly.

The FT200, for instance, has a grid-block potential of -100 V with respect to earth. Also some older rigs use cathode keying, where something like +100 V at perhaps 250 mA must be keyed. A small transistor like a 2N2222 at Q1 may not be up to the task. Hence the relay. With isolated fat contacts, you can confidently plug this keyer into any conventional rig, and expect to key it, regardless of polarity, voltage, or current. The relay used is not objectionably loud.

Construction

A printed circuit (PC) board measuring 105 mm x 65 mm accommodates all components except the "chassis-mounted" parts. The keyer is remarkably immune to nearby RF fields. Indeed, the first "lash-up" circuit, which was "blobbed" together ugly style, complete with full length leads all sticking up in the air, was not at all prone to interference from my 90 W HF transmitted signal. So it may be safely assumed that just about any favoured construction style will work.

The metal box shown is a stock item, measuring 180 x 132 x 60 mm WDH. However, a cheaper plastic box would probably be satisfactory also, but keep in

mind that the finished assembly must have some mass in order to prevent it from moving about the operating table if an internal paddle is used.

Holes for components on the PC board should be drilled 0.9 or 1 mm (#65 or 60), and those for the relay are drilled 1.4 mm (#55 approx). Corner mounting holes may be drilled to suit your mounting hardware – 3 mm is suggested. Solder in all passive components first, chips last. Observe correct orientation of all polarised components. Pin one of each chip, diode direction, and electrolytic capacitor polarities are shown on the copper side of the PC board as an aid.

The 4000 series chips do not appear to be especially prone to electrostatic damage – my own "ugly" circuit was worked on during hot dry weather with no great handling precautions being observed during experimentation, so I do not think that damage will result during normal assembly. However, do make sure that your electric soldering iron tip is properly connected to mains earth.

If your equipment is positive keyed at low current/voltage (eg TTL type levels), and there is never a need to key

other types, then the relay may be omitted, and the collector of Q1 becomes the "keying" line in the usual way. Also, without the need to drive the relay, current demand is so low that an ordinary little 9 V transistor radio battery will power the keyer for a long time.

The mains power supply shown uses a conventional centre-tapped 12.6 V winding arrangement, with two diodes and single filter capacitor, which delivers about 9 V DC. The Altronics type M-2851 transformer shown has its own internal fuse. A 500 mA fuse should be wired in series with the line side (brown wire) of the 240 V winding if no internal transformer fuse is fitted.

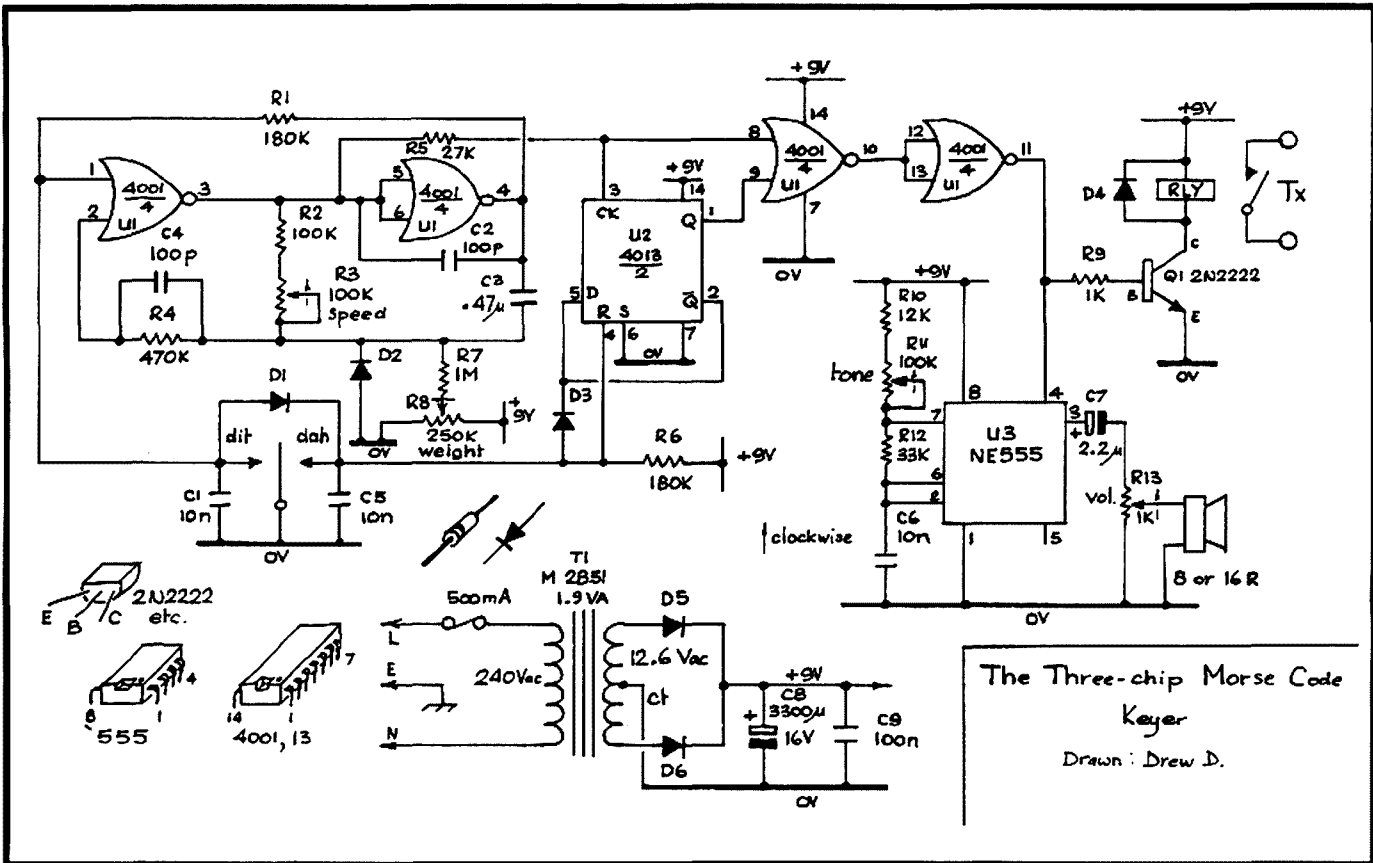
Power consumption is so low that a mains on/off switch is not required. All mains wiring must be properly covered, or insulated, to prevent accidental contact, and mains earth must be connected to chassis with a dedicated (that is, not a shared function) screw, lock-washer and nut.

The circuit will work satisfactorily from about 6 to 13 V DC, but operates best at 9 V. With the relay fitted, maximum current demand is about 50 mA. For portable use, or if you do not wish to operate the keyer from mains power, the device will work quite happily for a long time from a set of six size C or D cells. Circuit board negative common may be left "floating", or connected to chassis ground as desired. If keying with Q1, then connect 0 V to chassis ground. A spare PC hole is provided for this connection.

Keyer Paddle

There are one or two very handsome looking, and undoubtedly nice to use, keyer paddles available. However, quite good paddles may be made from back-to-back mounted straight keys (of the smaller type, such as WT 8 amp or J38), with paddle knobs to suit. Or you could make something like that shown, which only took a couple of pleasant hours in the workshop using scrap components.

The moving part is a 70 mm length of hack-saw blade, snapped (that is, fatigue-fractured), from an old blade. The brackets are made from off-cuts of L-section aluminium. Most hack-saw blades are only hardened at the teeth, the remainder is quite soft, and can be drilled



The Three-chip Morse Code Keyer
 Drawn: Drew D.

in the normal way. The pivot should be supported by two 3 mm screws, sandwiched between two L-brackets.

The fixed dot and dash contacts are a pair of 4 BA nickel-plated round-head screws, each with a lock-nut, which are fitted into 4 BA threaded L-brackets. Naturally, 5 mm, etc would serve. If you do not have a tap to suit, simply drill to clearance size, and fit a lock-nut each side.

Exposing the metal of the blade to obtain good electrical contact with the dot/dash contacts would probably be quite reliable if the keyer is used regularly (and therefore, the blade does not get a chance to rust). However, some sort of non-oxidising contacts are recommended. The contacts shown were salvaged from two old sets of Holden ignition points. The moving contact, plus sufficient of the little arm was fatigued off with pliers. The metal part may then be soft-soldered to the blade.

Hint; soldering one contact poses no problem, but how to solder the second one without de-soldering the first? Scrape the paint from the blade to expose bright metal. Pre-tin both sides with

solder. Pre-tin the back of the salvaged contacts. Now position the two contact points back-to-back in position on the blade, and fix them there with an alligator clip across the faces of the contacts. Heat with the soldering iron, and flow a little extra solder in the usual way.

Insulating material, such as Bakelite, Perspex, polycarbonate, etc would be fine for the base of the paddle, and a suitably sized and shaped piece may also be used to make the paddle knob, which is fitted to the existing hole in the blade end. Remember to recess the screw heads under the L-brackets so that they do not short to chassis.

Upon assembly, set the distance between contacts to about 0.5 mm for a start, then adjust to taste on completion. The convention for auto and semi-auto keyers is that, for the right hand, dots are produced from the thumb and dashes from the fingers, so the paddle contacts should be wired accordingly.

Operation

Before applying power, go over all your wiring and component locations

again, and confirm that all is correct. On power-on the circuit will output a single dot. Closing the dot and then the dash contacts should yield an evenly spaced string. Check operation of the four controls; speed range from slow to fast, weight variation from light to heavy, monitor tone about 800 to 1800 Hz, and monitor volume, from nil to loud.

Get the feel of the keyer at low speed first then, as skill and confidence build, so should speed. Correct spacing between letters and words is completely under the control of the operator. Watch out for the common errors of sending N N for C, M A for Q, P for AN, and G for ME (NAG instead of NAME is a common one). Also, try not to go "on-air" until a reasonable proficiency has been attained. Always remember, the mark of a good Morse operator is sending which is not necessarily fast, but is accurate, clean, and correctly spaced.

Now, just a personal opinion, which is at odds with the popular myth; it should be possible to continue to use a bug, and certainly a straight-key, after gaining proficiency with an electronic keyer. The trick is to regularly use all three.

depending upon working speed, conditions, and by applying the courtesy of matching the key type that you think the other operator is using.

Parts

As mentioned, all components specified are conventional, and should be available from your usual electronics component retailer, such as (in no particular order) Rod Irving, Dick Smiths, Jaycar and Altronics, etc. In or near Melbourne there are also All Electronic Components, Stewart Electronics, Rockby's and Truscotts Electronic World.

The only special component is the PC board. If you require a professionally made pre-drilled board, please write to me at the address shown, and include an SASE. Non-profit cost is \$8.00.

References and Further Reading

1. "Improving 4000 Series Oscillators", Owens, W5JQE, E & WW, June '86.
2. "Automatic Electronic Keyer" Smith, VK8CW, Lo-Key #46, June '95.
3. "Changing to a Keyer" Bold, ZLIAN, Morsum Magnificat #42.
4. Engineer's Notebook #2; Mims, Radio Shack/Archer.

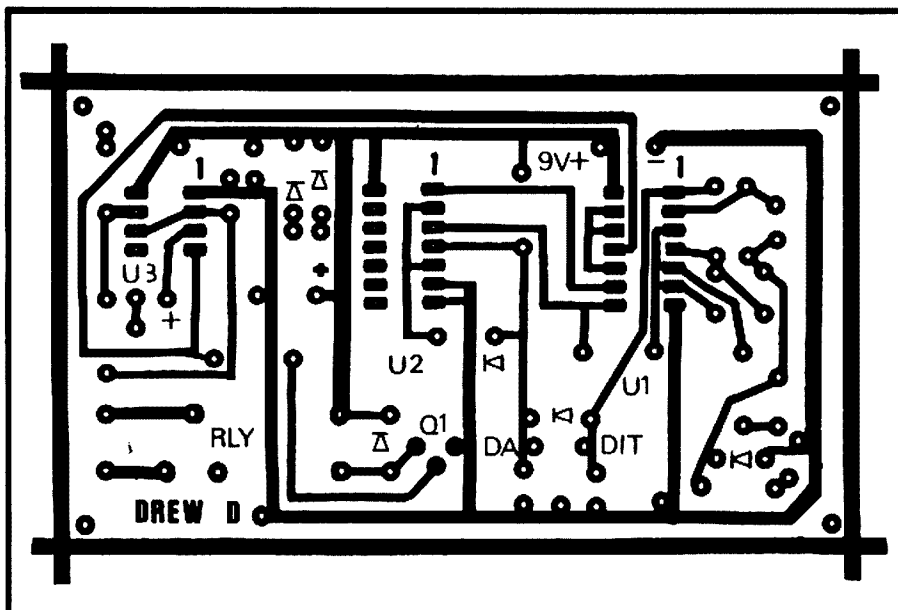
Parts List

Resistors

1 k 1/4 W 5%	R9
1 k log or lin pot	R13
12 k 1/4 W 5%	R10
27 k 1/4 W 5%	R5
33 k 1/4 W 5%	R12
100 k 1/4 W 5%	R2
100 k lin pot	R3, R11
180 k 1/4 W 5%	R1, R6
250 k lin pot	R8
470 k 1/4 W 5%	R4
1 M 1/4 W 5%	R7

Capacitors

100 pF ceramic or monolithic	C2, C4
10 nF (or 103 or 0.01 µF) mono	C1, C5, C6
100 nF (or 104 or 0.1 µF) mono	C9
0.47 µF (470 nF) mono non polar	C3
2.2 µF 16 V electrolytic	C7
3300 or 2500 µF 16 V electrolytic	C8



Artwork for the keyer circuit board shown actual size.

Semiconductors

1N914, 1N4148, etc	D1, D2, D3, D4
1N4004 etc	D5, D6
CD4001 C-MOS chip	U1
CD4013 C-MOS chip	U2
NE/LM-555 timer chip	U3
2N2222, 2N3704, etc	Q1

Miscellaneous

Case to suit, PC board, insulated PC

board mounting spacers (4), 8 or 16 R miniature speaker, 12 V relay with n/o or c/o contact (eg Rod Irving S14116, Jaycar SY-4050 or DS P8010), Tx terminals (2), knobs (4), mains cord, 12.6 V AC CT transformer type M-2851, paddle (see text), hook-up wire, solder, 3 mm or 1/8" Whit screws.

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WIA News

More Good Publicity for Amateur Radio

Amateur radio and the Wireless Institute gained nation-wide publicity in the nationally circulated *Australian Financial Review* on Tuesday, 18 November in a story about the commemorative Sputnik satellite currently in orbit and transmitting on the two-metre band.

The story, written by Financial Review journalist, Helen Meredith, and titled "Celebrating 40 years of Sputnik", resulted from a WIA media release sent out in the first week of November, following the launch of the scale model Sputnik by cosmonauts aboard the MIR spacecraft. The role of amateur radio in the Sputnik project was highlighted in the story, along with the fact that it was built by French and Russian school children.

WIA Federal President, Neil Penfold VK6NE, was quoted, from the WIA media release, explaining that the satellite was easy to hear using simple equipment.

The story went on to explain how the tone transmitted by the satellite indicated its internal temperature and that, "WIA says listening for the satellite and taking its temperature is an ideal school project."

The World Wide Web addresses of the French Sputnik team and the Amateur Satellite corporation were included by Helen Meredith in her story. For those who missed them in a previous WIA News item, they are: <http://www.oceanes.fr/~fr5fc/angspounik.html>, and www.amsat.org.

[Released 18/11/97]

Antennas

The Clemens Match

Phil Zeid VK6PZ
64 Dalkeith Road, Nedlands WA 6009

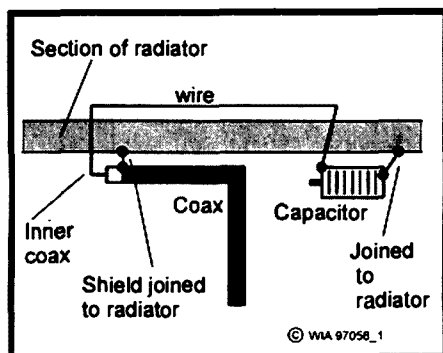


Fig 1 - The Clemens match. The coax feeder is run to the centre of the radiator, then along the radiator out to a distance of approximately 0.1L where the shield is attached to the radiator (L is a half wavelength). The inner wire of the coax is then joined to another wire which runs parallel to the radiator and back to a point equidistant from the centre on the opposite side. Here it is joined to the radiator through a variable capacitor.

The Clemens match is a balanced match and easy to adjust, so it is surprising that it is so little known. The only reference that I can find is on page 12.37 of the 5th edition (1983) of the RSGB handbook.

The Clemens match, as illustrated in the RSGB Handbook, is as shown in Fig 1. The original article does not show the coax shield joined to the centre of the

radiator. The writer feels that this may be an omission. The match has been built both with the insulated cover stripped from the coax and the copper shield then strapped along the radiator and also (the preferred method as described here) with the coax shield only attached to the radiator at its centre and its end. Both methods worked satisfactorily.

The match works equally well with a tube substituted for the wire. A metal is preferred as it provides rigidity and strength and avoids the need to support the wire at many points to prevent it moving or being displaced by kookaburras or other birds perching on it.

Experiments at ground level show that none of the measurements given, such as the size of the matching rod, distance to the outer end of the coax, or length of the radiator seem at all critical. The only care needed is to ensure, for good balance, that both ends of the tube or wire are connected to the radiator at the same distance from its centre.

Impedance matching is obtained by the spacing between the tube/wire and the radiator. Reactance is tuned out using the variable capacitor.

There is very little interaction between the impedance matching and the elimination of reactance. For information, and as a guide only, the

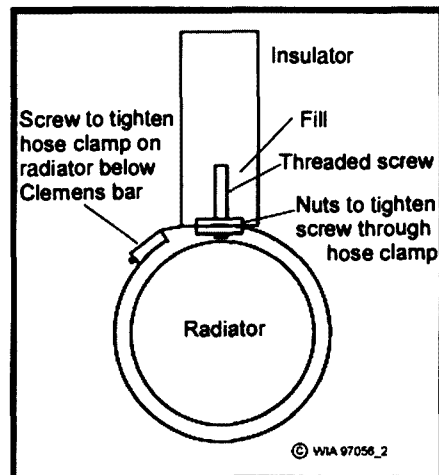


Fig 2 - The insulating system that allows adjusting the distance of the tube from the radiator.

dimensions of the 14 MHz radiator and match presently in use are:

Length of radiator = 10.18 m (33 ft, 4 ins)

Length of tuning tube = 2 m (6 ft, 6 ins), 1 m each side of centre.

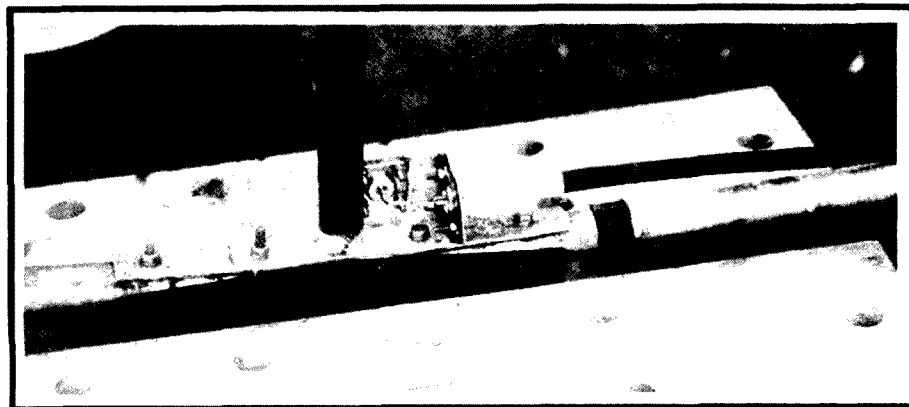
Diameter of the tuning tube = 16 mm aluminium tubing.

The capacitor is estimated at between 75 and 100 pF maximum with medium spaced vanes to avoid shorting out by condensation. With the antenna at the top of the tower it is about one third open. It is protected by a plastic box open at the bottom and bolted to the radiator using plenty of aluminox[®] at the jointing sections. A wire from the stator passes through the side of the box and is joined to the tube. The wires running to the end of the rod should be reasonably flexible (I used RG58 braid) and long enough to allow the rod to move towards and away from the radiator.

Construction

A Clemens match has been used here for over 10 years but was not of sound construction. The result was that Murphy eventually took up residence on the antenna. To overcome problems, discussions were held with Don VK6UT and Cec VK6AO to find suitable methods of construction. Don suggested insulating the system that allows adjusting the distance of the tube from the radiator (see Fig 2).

Cec VK6AO suggested and made up brackets with sockets to fix the radiator at



The centre bracket, the centre insulator and the coax running out to the 0.1L point.

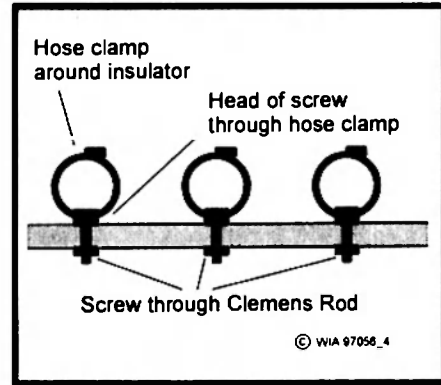
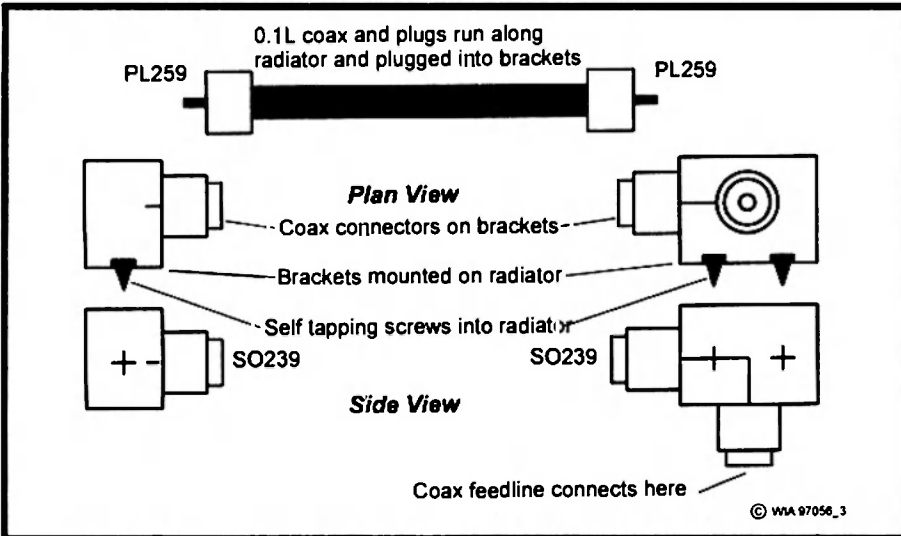


Fig 4 - The metal matching tube. The three insulators are positioned under these clamps. The rod is moved to tune and then locked in position.

bottom into which stainless steel threaded rod was fixed. The threaded rod goes through a hole drilled in a stainless steel hose clamp, of size suitable to fit around the radiator, and bolted on tightly. This allows the insulator to be fixed at any desired point on the radiator. If the insulator material is hollow the top should be sealed to prevent rain entering.

The Metal Matching Tube

The tube has three holes drilled into it, one at the centre and one on each side just over half way out to the end. Each hole has a stainless steel bolt run through it. The other end goes through a hole drilled in a stainless steel hose clamp, of a size suitable to slide over the insulator. Make sure that the screw for tightening the clamp is clear of the rod and facing inwards so that it is easily accessible from the centre of the radiator (see Fig 4).

These clamps slide over the three home made insulators that are fitted to the boom. These clamps are set with a slight friction so they can be moved during tuning after which they are tightened in position.

The completed matching system is shown in Fig 5.

Tuning

It is strongly recommended that you use a noise bridge that measures both impedance and reactance. In my opinion, 'nulling' the impedance is essential for a parasitic array to work properly. Nulling the reactance means that the radiator is resonant at the design frequency. This is necessary to have the

Fig 3 - The brackets with sockets to fix to the radiator at the centre and out to one side. The brackets are mounted with aluminox® between joints.

the centre and out to one side (see Fig 3).

The two aluminium brackets are screwed to the radiator using stainless steel self tapping screws. One bracket has two sockets for PL259 plugs. One faces at right angles to the radiator which takes the coax feed line and the other faces along the radiator to take the coax which runs out to the 0.1L point.

The other bracket is an 'L' bracket with one socket. It is fixed to the radiator with stainless steel self-tapping screws at the 0.1L point from the centre. Make sure

plenty of aluminox® is used between all connections and brackets. A suitable length of coax is made up with plugs at each end, to fit into the sockets. The plugs and sockets are eventually taped with stretchable rubberised tape used for sealing ships rigging. It is obtainable at most hardware shops.

The Insulators

Three insulators are used. These are made from 108 mm (7 inch) lengths of insulated tubing (sections of reticulation risers or rigid polypipe) with plugs at the



The author, Phil VK6PZ (second from left) ready to test the Clemens match at ground level with the help of (l to r) Don VK6UT, Coc VK6AO and Jim VK6RU.

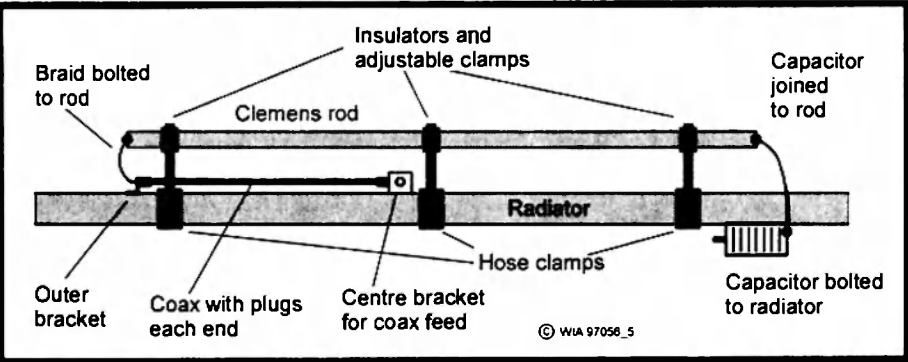
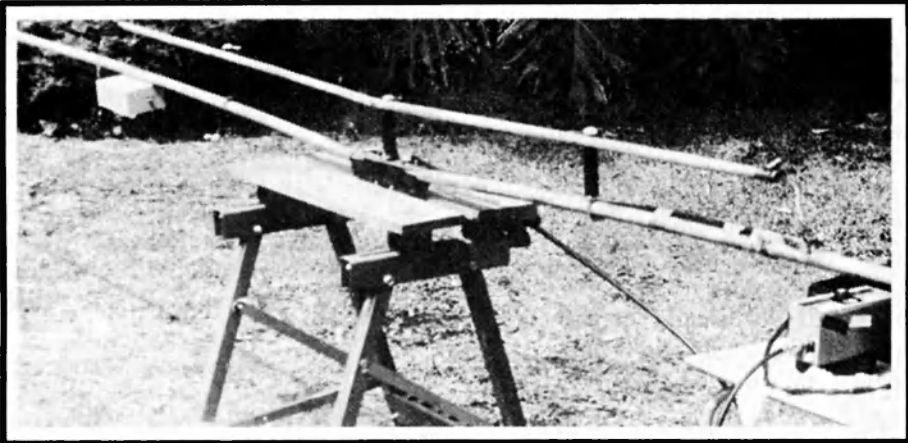
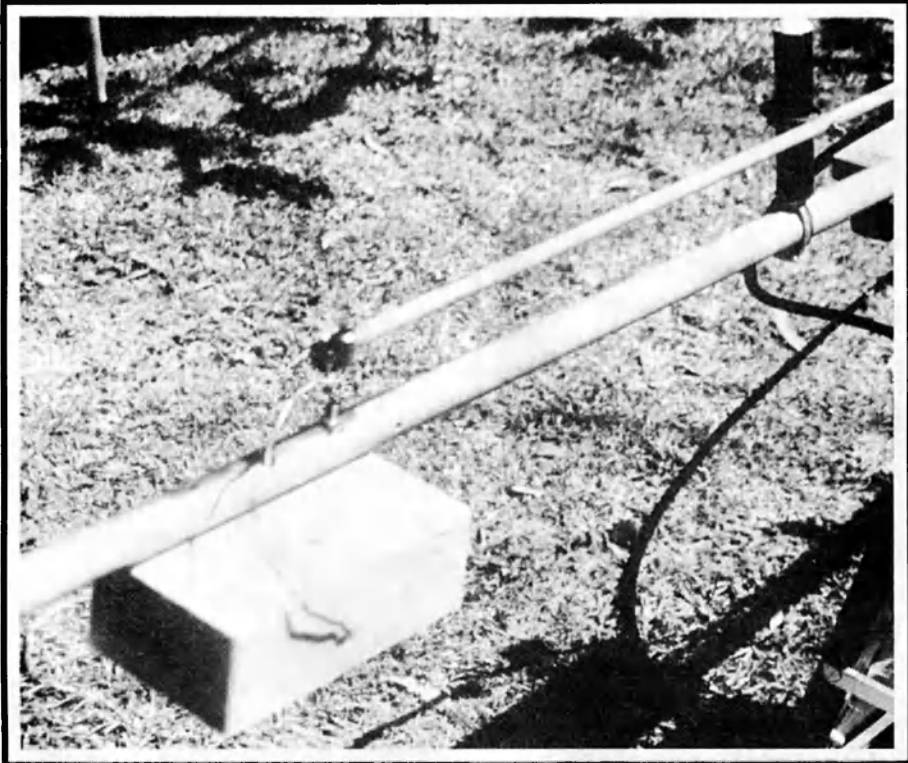


Fig 5 - The complete matching system.



The match finished and ready for testing.



A close-up of the rod and insulator with clamp on the insulator and the radiator. The tuning capacitor is in the box.

correct frequency relationship to the parasitic elements and hence provide the designed gain and back to front ratio.

Getting the best impedance match without knowing if the radiator is resonant at the design frequency is probably a major reason for poor Yagi performance. So, use a non-inductive resistance, of the same value as the coax, to calibrate the impedance of your noise bridge and check to the 'null' reactance point that you will use when matching the antennae.

To Adjust

To get the feel of how the Clemens match works you can experiment with matching the system with your antenna, or radiator alone, near level ground. For best results it is essential that final adjustment is made with the antenna in place. Do not work up the mast without a safety harness.

It is suggested you proceed as follows. Set up the noise bridge to the zero reactance point and leave it there. With the noise bridge attached to where the coax will eventually be attached, tune the noise bridge resistor and/or the Clemens capacitor until a reduction in noise is heard. Adjust both, one after the other, until a clear null is obtained.

The antenna is now matched, but not necessarily at the right impedance for the coaxial feedline. If the noise bridge reads higher than that of the impedance of the coax to be used, move the tube in toward the radiator and vice versa. Adjust the tube and recheck the new resistance null point.

Repeat this operation until the resistance reading on the noise bridge equals that of the coax. If required, adjust the Clemens capacitor for best null reading. Leave the noise bridge reactance control at the zero position.

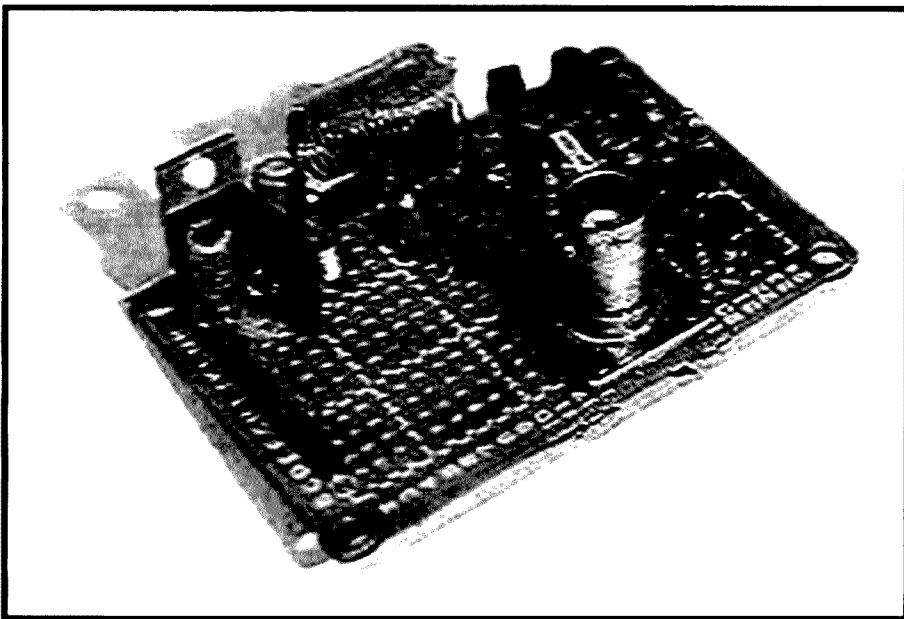
This completes the tuning. It is quick and easy to do. When satisfied, reach out and tighten the hose clamps on the insulators. Finally, recheck the Clemens tuning capacitor. Remove the noise bridge and connect the coax feedline.

You should now have a balanced match, a 1:1 SWR, and a radiator resonant at its design frequency, therefore having the correct relationship to the parasitic elements.

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■ Repeater Link VHF/UHF Signal Generator

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The circuit constructed on Tandy board.

Useful?

I do not know how reproducible this circuit is. However, after spending some 50 hours to develop it over several months, I hope you will find it useful and, at the very least, give you some ideas on how simple a signal generator can be for VHF and UHF.

VHF/UHF Signal Generator

If you build, service or play around with voice repeaters, digipeaters or FM radios in general, then a signal generator is a very valuable piece of test gear. This article is a design for a signal generator that covers the 2 metre and 70 centimetre bands. The generator is continuously variable in frequency and level, and has provision for audio input, be it voice, tone or CTCSS.

What Frequency?

Once the signal generator is working, how do you know what frequency it is on? It would be possible to calibrate the frequency and provide some form of dial but, in practice, I have not found this necessary. Open the mute on the radio under test and tune the signal generator across the band and you will find the correct frequency fairly easily. If it is a new radio you are tuning up, then use another radio as a frequency marker. Find the required frequency on the working radio and then connect the radio to be tuned up to the signal generator.

Background

It is important to understand a bit about this design to gauge how it suits your requirements and what limitations the design might have. As I have mentioned, I don't know how

reproducible this signal generator will be, as the method of construction is largely up to you.

I have had access to a commercial signal generator at work for many years but always wanted my own. Many years ago Dick Smith Electronics was throwing out a companion VFO, the FV107 for next to nothing. I bought one and it lay around for a while until I modified the frequency of operation. The original VFO ran at about 5 MHz, and I was able to increase the frequency up to about 90 MHz. The circuit would just not go any higher without extensive changes; pity, I thought, as it would have been nice to get it up to 148 MHz for use as a signal generator.

As a compromise I set the VFO up at half the two metre band frequency of 72 to 74 MHz, and it produced a nice signal on the two metre band due to the second harmonic. In fact, there was also a very healthy harmonic signal on 70 cm; so, two signal generators for the price of one. This brings me to some very important points about a signal generator, and they are:

1. It must be frequency stable;
2. It must have smooth, easy frequency tuning; and
3. It must have as close to no signal leakage as possible.

Number 3 is perhaps the most important of all, and the most difficult to obtain. If a signal generator radiates a signal from itself via power cords or poor RF shielding, it is next to useless. If the radio you are testing is picking up just as much signal via other paths as it is receiving via the correct signal generator output, then accurate measurement and alignment of the radio is difficult at best.

As it turned out, having the signal generator operating at a sub-harmonic of the desired frequency is a good idea, the reason being that there is less 2 m and 70 cm energy you have to shield against. Commercial signal generators usually operate on the same frequency as you require and, as such, have considerable RF shielding. The VFO unit is contained in a very thick metal box with extensive RF de-coupling of all connections to the VFO. This is difficult to achieve in a home brew unit.

Remember, the oscillator of a signal generator operating at the same

frequency as you require for testing, provides a volt or more of signal and your radio, when tuned up, can hear down to a fraction of a millionth of a volt. By using the second harmonic there is about 40 dB less signal level to deal with and RF shielding is that much easier to achieve. True, you have less signal level available, but do you really require a volt of signal to align a radio? If it is that deaf then it requires basic adjustment before the signal generator is used. Enough of the basics now; on to the design as presented.

The Best Laid Plans . . .

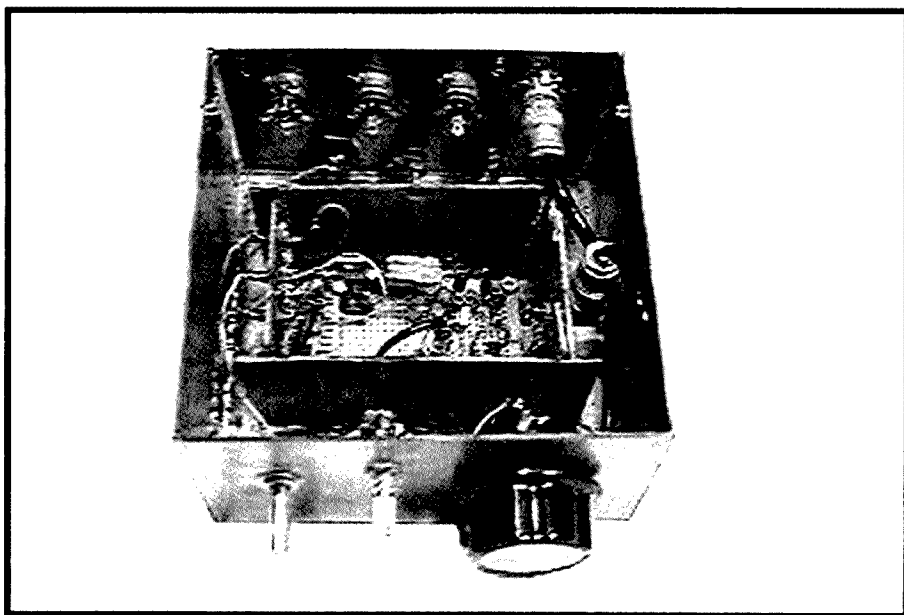
So started the article intended for the December 1997 issue of *Amateur Radio*. However, I decided to do some minor modifications and, in the process, discovered the oscillator would not always oscillate. Try as I might the circuit was just not reliable enough. If I had problems with the design, what was the point of expecting others to reproduce the signal generator?

It may be that the oscillator running at around 73 MHz was not the correct design for this frequency. This forced a lot of thinking and finally a decision to lower the frequency of operation. It was then that I had a bright idea; lower the fundamental frequency of operation to around 29 MHz; 29.200 MHz times 5 is 146 MHz. The reason for picking this frequency is that most amateurs have an HF receiver that covers the 28 to 30 MHz band. This could be most useful for testing and setting up the signal generator.

What is the worst thing an oscillator can do? Answer, not oscillate. Sounds silly, but if you build an oscillator and it does not oscillate you have two problems. Firstly, you may not realise it is not oscillating and secondly, once you discover it is not oscillating, how do you make it oscillate? To do this you require a means of checking to see if the circuit is oscillating and, if so, on what frequency. With many amateurs having limited test gear this is of the utmost importance. There is no point in designing a signal generator if most amateurs can't make it go. So the 29 MHz fundamental idea has a lot of merit.

The Circuit

Believe it or not, free running



The Tandy board inside the circuit board box inside the box containing the controls.

(The two photos are digital photos taken with VK6UU's video camera, as his digital still camera cannot focus close enough.)

oscillators at 29 MHz are fairly stable provided the right components are used. This design, when listened to on 2 m, drifts from switch-on, but only tens of kHz for a few minutes on the harmonic on 2 metres, and then settles down to remain on frequency, only requiring occasional frequency re-adjustment. I have found it not unusual to remain close to a given FM frequency all day. Every time the radio under test was turned on, the signal generator needed no adjustment.

In my original design I wanted to use easy to obtain components so I experimented with RFCs available from Dick Smith Electronics. These chokes come in all sorts of values; so, after a bit of trial and error, a circuit was produced where the main frequency determining inductor was one of these RFCs. However, the temperature stability, and hence frequency stability, of the circuit was terrible. I had to return to using an air-wound coil as shown in the circuit. The two RFCs in the source leads of the FETs are those discarded as oscillator inductors, but are not in critical areas of the frequency determining part of the oscillator.

The other important frequency determining parts of the circuit are the capacitors shown with PS* next to them;

these are polystyrene capacitors and are very temperature stable. It is important to use these capacitors!

What makes producing a signal generator like this difficult from scratch, is the correct frequency range. It is easy to make the circuit oscillate, but not so easy to make it oscillate on the frequency you want, and over the tuning range you want. Using a hand-held transceiver to find the operating frequency after each modification is very difficult, as changes can result in the frequency shifting many tens of MHz, or, in some instances, not oscillating at all. I was able to use a spectrum analyser for the ground work and this made it easy.

The frequency tuning is done using a varicap diode and a multi-turn potentiometer. A twenty turn pot is the best if you can find one; note that the value of the multi-turn pot is not important. Anywhere from 5 k to 1 M works as it is just a means of obtaining a smooth variable voltage. I found that Radio Spares sells a range of multi-turn pots. A large knob on the potentiometer is important to give you good control. As a variation, a small fine-tune pot could be included in series with the main tuning pot.

The varicap diode is a BB212 available from Dick Smith Electronics

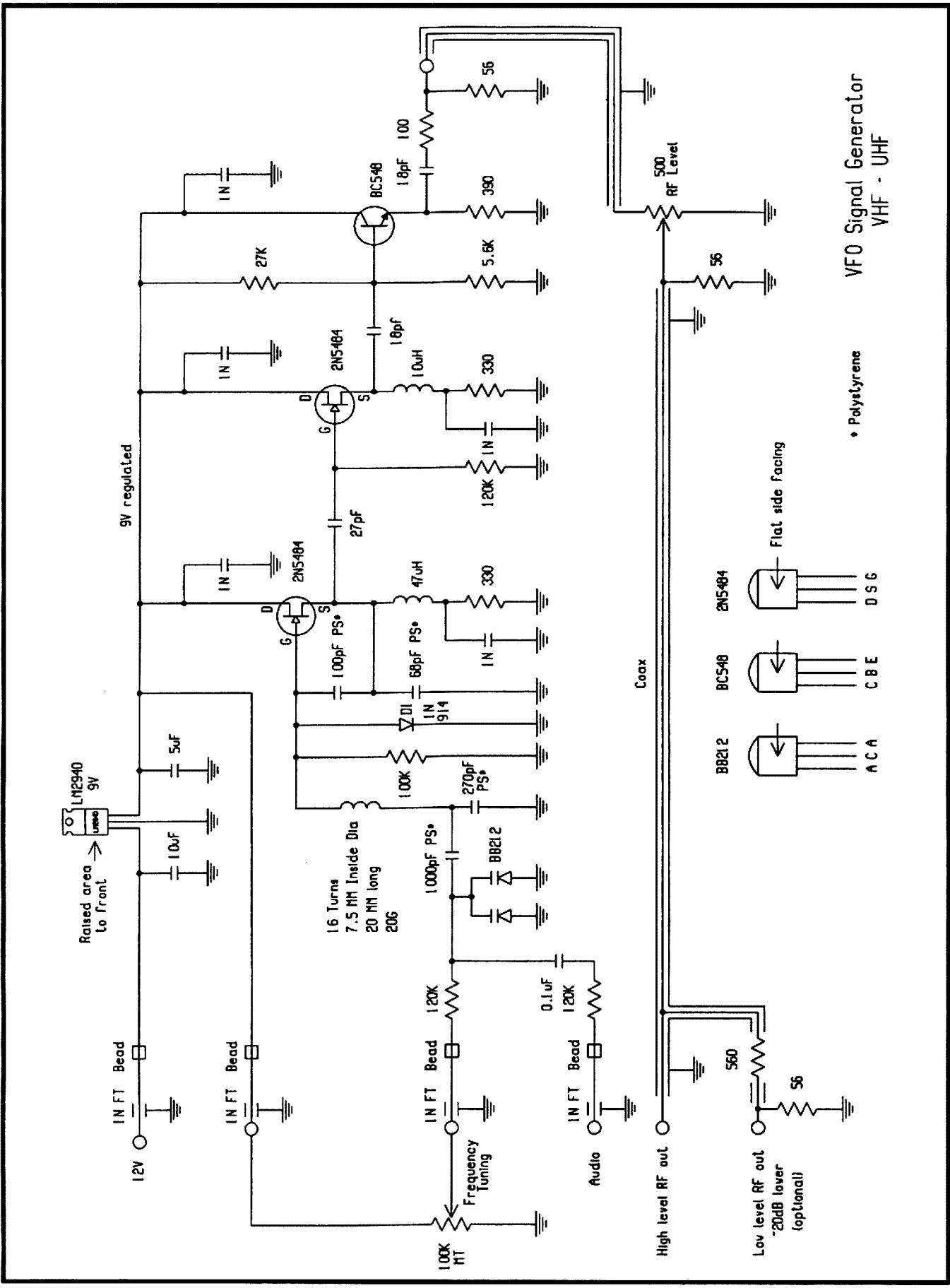


Fig 1 - Schematic of the VHF/UHF Signal Generator

(Drawn by VK6JUU)

and has a very wide capacitance differential (CD) of 22. At near zero volts the capacitance is about 600 pF, and at 8 volts about 30 pF. The BB212 is two varicaps in one package and I joined the two together. The cathode is common inside the package with two anodes. Join the two anodes together. This then provides a variable capacitor from over 1000 pF down to about 50 pF. This brings me to an important point.

The circuit will stop oscillating if the total capacitance from the bottom of the oscillator inductor to grounds falls too low. I found this minimum value to be around 200 pF. Note the fixed 270 pF capacitor between the bottom of the inductor and ground. This is required as the varicaps can be tuned to a low capacitance that stops the circuit oscillating.

Is It Oscillating?

When you build up the circuit you want to know whether it is oscillating before you go any further. I found placing a finger on the oscillator inductor changed the voltage on the source resistor to ground. It was not much of a change but enough to indicate the circuit was oscillating.

Signal Level

A signal generator must have a level adjustment. This can be difficult to obtain easily. I tried various methods and the simplest was a potentiometer. Carbon pots do not make good RF level adjusters and don't take the signal level all the way down to zero if too high a level is fed into them. This is because, even when fully down, there is some inductance, and at these frequencies that inductance means the pot does not go down to zero ohms. However, about 40 dB in range was obtained with a carbon pot. This lack of range with the carbon pot means that if you feed a signal level higher than 40 dB above the noise floor then you can't wind the level down into the noise.

Frequency Pulling

While on the subject of the RF level control, I found a small amount of frequency pulling when the RF level pot is turned fully up. On 2 m it amounted to about 2 kHz, so I added another buffer stage to the design; however, this did not

fix the frequency shift. Having run out of time I don't know if this problem is part of the design or a condition that may not occur with any other units that are made. I would be interested to know if you find the same problem.

Construction

My circuit was built on Tandy board. These boards come in a variety of sizes and look like Vero board, but with all the solder pads isolated so that you have to join pads rather than cut between them. It works well and is easy to use.

The entire circuit board was enclosed inside circuit board material, with the lid soldered on. Along with all leads in and out going through feed through capacitors and with ferrite beads on each of the leads, the RF shielding is good. The RF output is via a BNC socket, or "N" type, as you prefer.

This box is then mounted inside another box that contains the controls, power in and RF out, and is also made out of printed circuit board material. A BNC or "N" type connector is then added to the outside box and the RF fed from the first connector via coax. Using printed circuit board material results in an easy way of obtaining a fully screened RF box.

Further Thoughts

A few comments about the design. My unit ended up producing about 30 μ V on 2 m and 10 μ V on 70 cm. The amount of RF output can be increased by changing the bias voltage on the last buffer transistor. I don't know why, but I found that lowering the base to ground resistor to about 2.7 k resulted in 100 μ V on 2 m.

If the output pot will not lower the signal level low enough, increase the 100 ohm resistor on the output of the last buffer stage, or reduce the value of the 18 pF capacitor on the output stage. Another method, as shown in the circuit diagram, is to include an attenuated output with two outputs from the signal generator, one high level and the other lower level.

Note the diode between the gate of the oscillator FET and ground. This is to limit the drive to the gate and it also reduces the amount of harmonics produced. So, if you want a lot more output (20 dB), remove the diode, but

you will have to add a capacitor to compensate.

My unit tuned from about 28 MHz (140 MHz, 420 MHz) to 29.7 MHz (148.5 MHz, 445.5 MHz). If you only require the 2 metre band, then reduce the frequency range by adding resistors either side of the multi-turn pot. This will also give you smoother frequency control with more turns required to shift frequency.

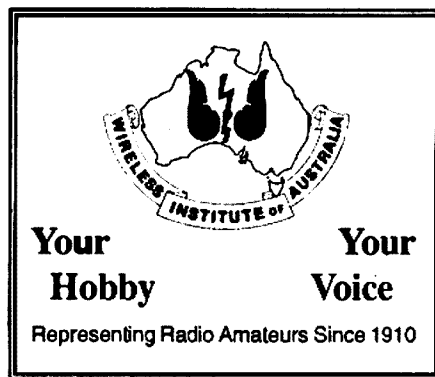
The oscillator inductor is air wound and supported by simply soldering onto the board. This inductor is vibration sensitive and acts like a microphone. To dampen this down, apply Silastic® over the coil. The wire I used is tinned copper and about 20 gauge. I was not sure of the size but it measured 30 thousandths of an inch on my micrometer. The coil turns are wound as close together as possible without touching.

Feedback

There are lots of possibilities to improve this design and I would like feedback on the design and attempts to build the generator. One idea that comes to mind is that the frequency tuning could be switched with different voltages to the varicap to give different band segments and hence slower main tuning.

The project is worth consideration as an RF signal generator which is worth its weight in gold for repeater site measurements. I hope to find the time to improve the design and provide greater signal output. Also, a design running at 146 MHz interests me. Does anyone have a circuit for a VFO circuit running at 146 MHz?

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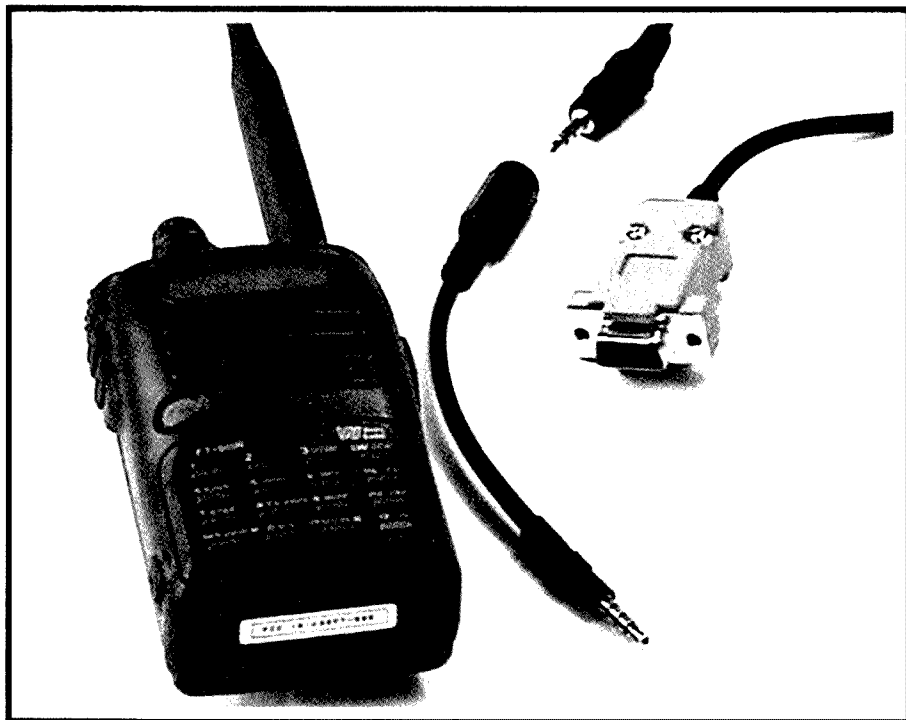
■ Equipment Review

Advanced Data Management Software

ADMS-1C for Yaesu FT-10R, FT-11R, FT-50R and FT-51R

ADMS-2C for Yaesu FT-3000M, FT-8000R and FT-8500R

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The ADMS-1C interface cable and adapter with the FT-50R used in the review.

When I first became seriously interested in amateur radio, back in 1982, life was simple. A Yaesu FT-202R borrowed from my college radio club let me listen to activity on the local repeater (FI4LRC) and the common simplex frequencies. Six crystal-locked channels, volume and squelch, and nothing else.

How things have changed. In 1997, my FT-50R is less than half the size, has thousands of VHF and UHF channels

and is programmable in more ways than I can remember. Miniaturisation has led to knobs and buttons having multiple modes, depending on whether you press them for just a moment, or hold them down for a second, or . . . Suffice to say that things have become complicated. When you want to use a feature for the first time in six months and you've misplaced the manual, what is a ham to do?

Help is at hand! The Advanced Data

Management System (ADMS) lets you set up your rig with your personal computer. The software, which runs under Microsoft Windows, offers the convenience of a standard Windows interface, with menus, drop-down lists, option buttons, etc. Simply point and click at the options you require, or type in frequency values and so on as desired, then send the new settings to the radio.

The ADMS package comprises the software, on 3.5" diskette, and an interface cable suitable for connecting the computer to the rig via the mic/earphone socket (ADMS-1C) or packet data socket (ADMS-2C). For this review I used the ADMS-1C with a Yaesu FT-50R; the ADMS-2C operates in a similar manner.

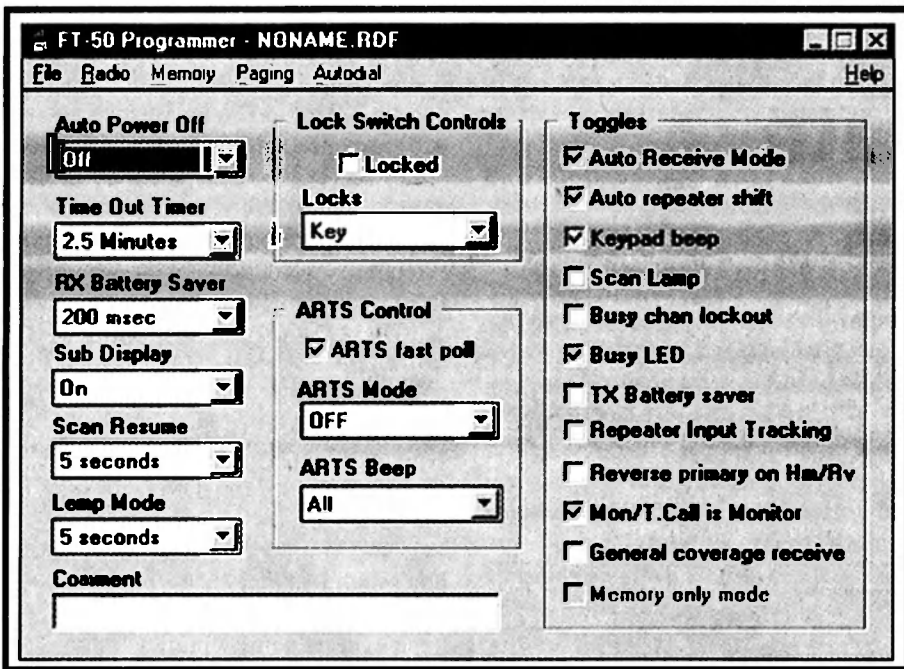
Software installation is as simple as one expects with Windows applications these days. Run the SETUP program, answer a few questions and you're ready to go.

The ADMS-1C interface cable comes in two parts:

- a 9-pin "D"-type plug which connects to a serial port on your PC, connected to a standard 3.5 mm stereo jack plug (if your serial port has 25-pin sockets only, you'll need to buy a 9-to-25 pin adapter); and
- an adapter with a 3.5 mm stereo socket at one end and a 3.5 mm, 4-contact jack plug at the other. This is for use specifically with the FT-50R. Those who own an FT-50R and external speaker/microphone will be familiar with the plug (and, like me, are perhaps miffed that Dick Smith doesn't seem to stock them.) The adapter may be useful for those wishing to homebrew their own speaker/microphone for the FT-50R, though be aware that it carries only audio in and out, plus ground, so it won't help you use the FT-50R for packet radio.

The accompanying screen dumps give some idea of how the various features can be programmed with the ADMS software. The interface is moderately intuitive; although, as the program was written for Windows 3.1, it doesn't take advantage of the ergonomic improvements added in Windows 95, such as context-sensitive menus.

The program uses different "templates" for each rig type. Normally, you would read the current settings from



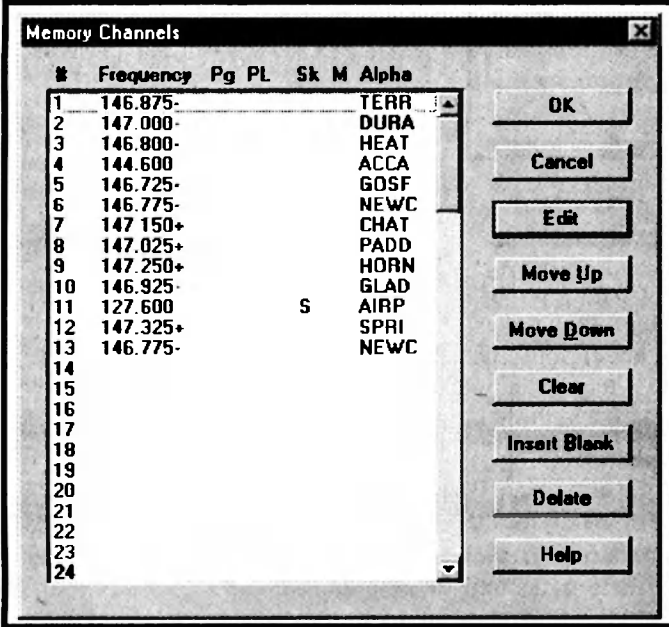
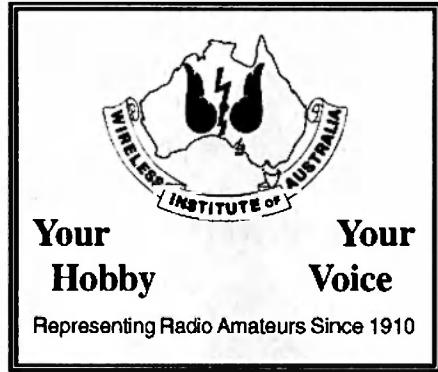
The ADMS-1C default screen.

your rig and save them to disk, then program in the new settings, save to another file, and send them back to the rig. The procedure is quite simple and the program guides you through it all. The templates are not interchangeable, so it's not possible to, say, clone the settings of an FT-50R onto an FT-51R. The online help is sparse in places (sometimes just a single line telling you

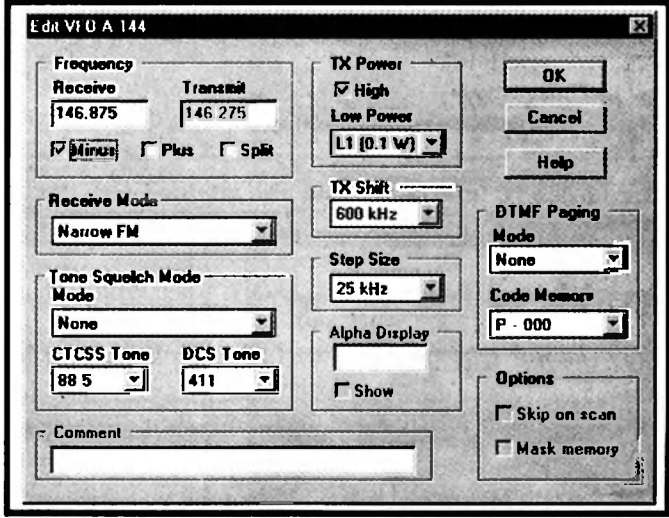
no more than the name of the control), and on occasion I have found it necessary to consult the manual about the finer details of those lesser used functions like paging and auto-dialling. Nevertheless, the ADMS is a worthwhile accessory for these rigs, and with the recent price cut from \$85, they are even better value.

The units are available from Dick Smith Electronics for \$69.95 each. The ADMS-1C (Cat no. D 3752) is for use

with the Yaesu FT-10R, FT-11R, FT-50R and FT-51R hand-helds; and the ADMS-2C (Cat no. D 3758) is for use with the Yaesu FT-3000M, FT-8000R and FT-8500R transceivers. Just as we were going to press, Chris Ayres from Dick Smith Electronics advised that new models would be available from the end of December at \$79.95 each. The ADMS-1D will replace the ADMS-1C, with the addition of the new VX-1R dual band micro hand-held to the list of equipment it can be used with; and the ADMS-2D will replace the ADMS-2C with the addition of being also suitable for use with the new FT-8100 transceiver. I would thank Dick Smith Electronics for the loan of the review unit if I hadn't already bought one for myself!



The ADMS-1C Memory Channels screen.



The ADMS-1C VFO A screen.

Technical Abstracts

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Tetrahedral Dipole Antenna

In *RadCom*, September 1997, Pat Hawker G3VA, in his *Technical Topics* column, features an interesting antenna design. It is a Tetrahedral Dipole Antenna which is a development of a centre fed bi-conical dipole. The antenna was originally described at the 10th International Conference on Antennas and Propagation (ICAP97) and published in IEE Conference Publication No 436 pp 1428-1430. The antenna was invented by Alan Boswell and Barry Peters of the GEC-Marconi Research Centre and is the subject of UK Patent GB 2302990 granted February 1997.

The antenna is a development of the bi-conical dipole and is centre fed. The antenna is built as a space-frame of 12 metal tubes in the form of two regular

tetrahedrons mounted one above the other. The apexes are separated by an insulated platform to which the three tubes are attached to each side. The tubes are of copper or aluminium and are of good RF conductivity. The arrangement is shown in Fig 1.

The self supporting structure is held in place by insulating rods [B] in Fig 1. The central platform is made up of two metal plates [C] and an insulator [D] in the form of a sandwich. The metal tubes [A] are of equal length and, in the prototype, were 2.9 metres long. The feedline [F] is of 75 ohm impedance and is dropped vertically from the feed point and then run along the ground so as to minimise currents in the outer of the feeder cable. The support blocks [E] insulating the antenna from the ground are 100 mm high.

The resonant frequency of the prototype was 22.5 MHz and the bandwidth was given as 35% for a 2:1 SWR when fed with 75 ohm cable. The structure stood a little over 4.2 metres high as each tetrahedron is 2.1 metres high. At 22.5 MHz the measured feed impedance of the prototype was 68-j14 ohms. Increasing the height of the antenna above ground to 500 mm resulted in a feed impedance of 42-j32

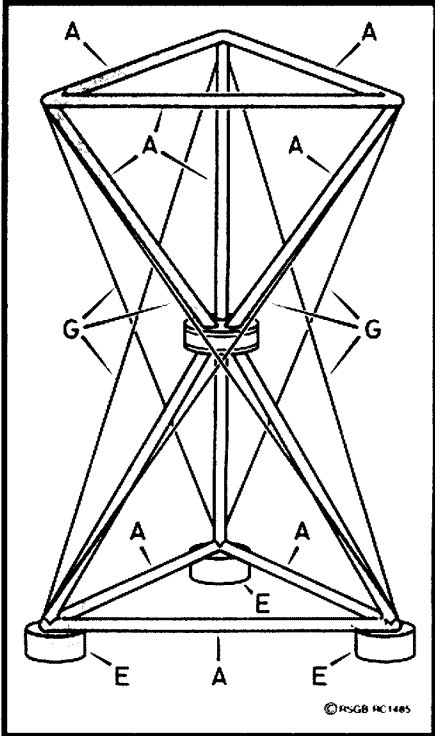


Fig 2 - Second implementation using insulating rope bracing.

ohms and the resonant frequency rose to 26.1 MHz.

A second implementation of the antenna was described and is shown in Fig 2. In this the rigid supports [B] of Fig 1 are replaced by insulated non-stretchable ropes [G] bracing the structure. The insulated support blocks are now at the corners.

The centre feed and support insulating sandwich is shown in Fig 3. The dimensions need to be such that it is mechanically sufficient for the structure.

The measured return loss and SWR are shown in Fig 4. The curves show both

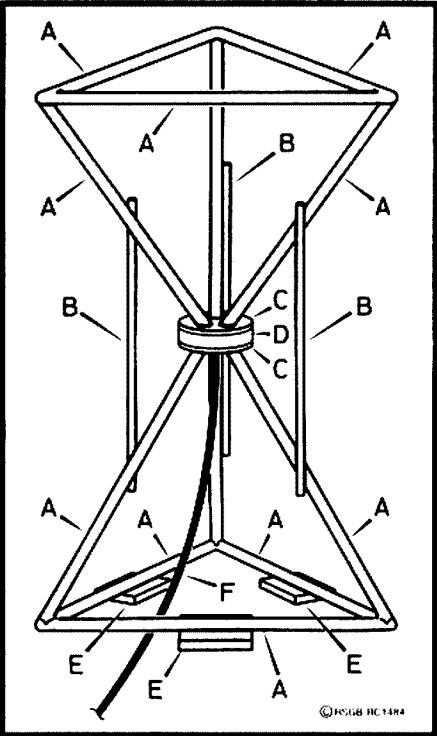


Fig 1 - GEC-Marconi Tetrahedral Vertical Antenna.

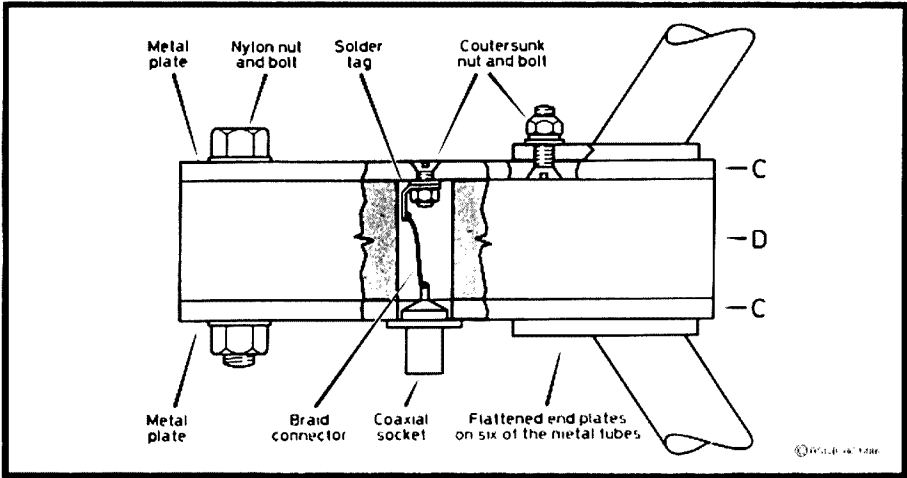


Fig 3 - Centre feed support sandwich.

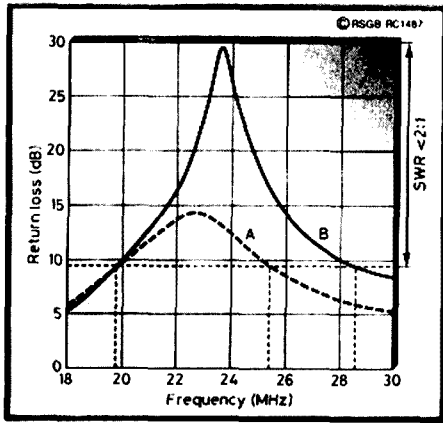


Fig 4 - Measured return loss. [A] with 50 ohm cable; and [B] with 75 ohm cable.

a 75 ohm feed and a 50 ohm feed. A return loss less than 9.54 dB represents an SWR better than 2:1. Return loss is preferred over SWR in many professional circles. The effect of a series one microhenry inductor in the feed is shown in Fig 5. The resonant frequency drops to 15.5 MHz with a 2.7 MHz bandwidth.

The antenna offers interesting possibilities for the 14 to 24 MHz bands with a simple ATU or maybe just a broadband matching transformer. It should be noted that there is the possibility of high RF voltages close to ground and that the radiated field could be high in the area close to the antenna. Accordingly, appropriate precautions should be taken to restrict access and only allow access to safe areas around the antenna. The power level used and the siting of the antenna will be of importance in determining the safe area.

Series Diode Strings

Series diode strings are often used in power supplies for valve linear

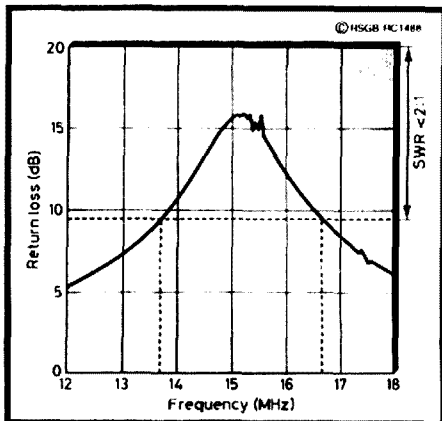


Fig 5 - Measured return loss with series one microhenry coil.

amplifiers. Individual diodes do not have sufficient reverse voltage ratings and so we are forced to use a series string. These are often paralleled with equalising resistors and capacitors in an attempt to equalise the reverse voltages appearing across the individual diodes.

Recent items in both *QST* and the *Technical Topics* column of Pat Hawker G3VA in *RadCom* have thrown new light on series diode strings and the need for these resistors and capacitors. In *QST*, July 1997, Technical Correspondence from Ken Stuart W3VFN, ARRL Technical Advisor, clarifies the practice. This was followed up in *Technical Topics* in *RadCom*, October 1997.

When silicon diodes first appeared, the reverse failure was due to an arc-over which destroyed the diode. This unbalanced the string resulting in other diodes having their ratings exceeded and their subsequent demise. Resistors were used to swamp the internal leakage currents of the individual diodes and force equal voltage sharing.

Similarly, capacitors were used to swamp the individual diode capacitance and force equal voltages across individual diodes.

Unfortunately, it is hard to find resistors with an individual voltage rating greater than 300 volts. This complicates the construction of a series string for diodes with greater than a 300 volt reverse rating. Also, the capacitors used have a problem with momentary dielectric breakdown which can result in over-stressing a diode string.

However, all is not lost as diodes are now manufactured differently from those early diodes. They have a different reverse breakdown called a reverse avalanche. The diode behaves more like a Zener diode and this helps to prevent a reverse breakdown arc by limiting the maximum voltage across the junction. The arc is what caused the low voltage

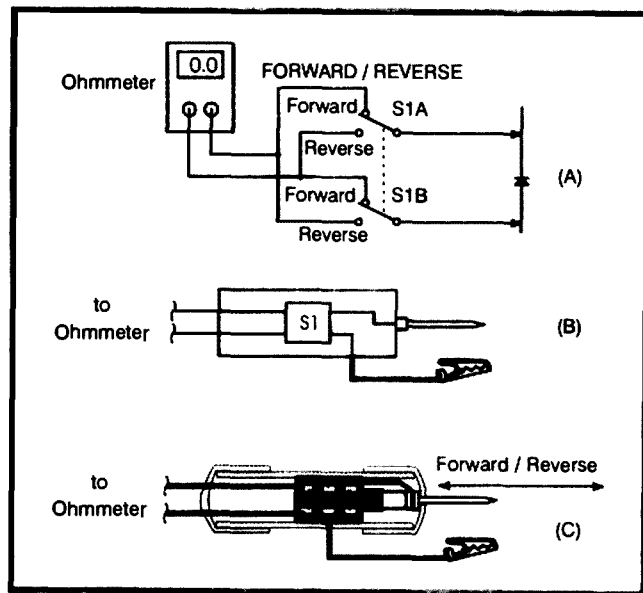


Fig 6 - Reverse-a-Probe.

across one diode and the resultant over-stress of the other diodes.

The way to build a series string nowadays is not to use a parallel resistor and capacitor string, as these components are likely to be more trouble than the diode string. The cost of diodes has fallen and it is more sensible to simply put more diodes in series so that they are working very conservatively at a fraction of their reverse voltage rating.

You could search out diodes which are advertised as avalanche diodes but apparently most diodes are of this type. Diodes are very cheap nowadays so it makes a lot of sense to simply increase the number in the string so that the resultant PIV of the string has a good safety margin.

Reverse-a-Probe

A useful test probe idea appeared in the *Hints and Kinks* column of *QST*, August 1997, edited by Bob Schetgen KU7G. The probe is a test probe with an in-built reversing switch which was developed by A W Edwards K5CN.

A probe with an in-built reversing switch is very useful when testing semiconductors on a printed circuit board. Once the device has been located and resistance measured in one direction, it is simple to measure the reverse resistance without having to move the test probe. This simplifies testing as it is often difficult just to get the probes on the right points on a circuit board.

The circuit of the Reverse-a-Probe is shown in Fig 6A. A basic implementation with the switch mounted in a probe housing is shown in Fig 6B. A more elegant arrangement is shown in Fig 6C.

The arrangement shown in Fig 6C uses a push switch mounted in a probe

housing with the probe tip mounted on the push arm of a push switch. The probe housing could be fabricated out of PVC or maybe a suitable pill bottle. With this arrangement you only have to push to reverse the polarity of the test connection.

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■ Electrical Safety – On the Secondary Side

Lloyd Butler VK5BR
18 Ottawa Avenue, Panorama 5041

(Originally published in the June 1997 Newsletter of The Adelaide Hills Amateur Radio Society)

These days we are fortunate to have Residual Current Devices (RCDs) to provide protection from shock in the event of touching the 240 V mains. These devices detect current unbalance between the two mains lines such as might be caused by human contact bypassing some of the current from one line leg to ground.

However, where equipment power circuits are coupled to the mains via a transformer, the RCD provides no protection against electrical shock from high voltage in the equipment itself. Most modern electronic circuitry is solid state, operating from low voltage supplies which present no danger. Working on such equipment tends to make one complacent concerning electrical shock and liable to overlook the possible additional presence of high voltage. However, much equipment still used by radio amateurs contains electron tubes operated from high DC voltage, so we should take care.

Many transceivers, although essentially solid state, use electron tube final RF power amplifiers. Such transceivers could utilise DC potentials in the order of 600 V and AC potentials at the transformer secondary even higher. A typical high powered linear amplifier might operate from a DC supply of several thousand volts. Even earlier types of valve radios have their dangers with DC potentials in the order of 250 V and AC potentials of 300 V to 400 V. Not to forget that the cathode ray tube in the computer monitor can be supplied with some rather dangerous potentials.

Precautions

So what precautions can we take? First of all don't put your fingers into the circuitry when it is turned on. If a test probe is to be inserted, hold the probe by its insulated end and keep the other hand away from the metal chassis. Of course, the whole idea is to prevent current passing through the main part of the body in the event of contact of high voltage by the one hand. In the days I worked on large transmitter racks we adopted the following procedure: stand on a rubber mat, only use one hand to carry out adjustment and keep the other hand well in the trouser pocket. Such transmitters were fitted with gate interlocks which turned off the high tension when any gate of the transmitter was opened. However, the gate switches often had to be bypassed to enable amplifier neutralisation and other active adjustments.

An obvious piece of advice is, if you have to work on the circuitry, make sure you turn off the power to it first. When equipment is connected by a power cord, I personally like to see the power plug removed from its socket before I put my fingers in. However, in spite of removing the power supply source, the equipment might still not be safe as there can be capacitors left charged up to a hazardous voltage.

A bleeder resistor connected across the high tension of a transmitter power supply to discharge capacitors is a good in-built safety measure and is, hopefully, incorporated in the equipment. However,

you can never rely on a bleeder being fitted and, after first turning off power, it is a wise procedure to short out the high tension line with the metal shaft of an insulated screwdriver. If the energy stored is large enough you might burn a hole in the screwdriver but better this than endangering yourself. Even the more docile 250 V which could be stored in the filter capacitors of a valve radio receiver can make quite a zap when discharged by short circuit. It can give you quite a jolt if you happen to get across the un-discharged DC line yourself.

Now, you may know that the equipment has a bleeder resistor installed or has other load circuitry which discharges the capacitors. Even so, don't be too anxious to get into the equipment. The time constant of the circuit capacitance and the bleeder resistance might be long enough to hold the voltage to a high level for quite some time before it decays to a safe level. The short circuit screwdriver is still a good precaution even if the bleeder is installed.

Check First

If you have the slightest doubt about whether a circuit is electrically dead, then first check it with a voltmeter. However, if you must touch it, make the first touch with the back of the hand rather than grab it with the palm of the hand (of course, the other hand and the rest of the body should also not be in contact with anything else not insulated.) The reason for this procedure is that, if you get a shock, the current flow through the body actuates muscles and if the active conductor is in the palm of the hand, it might clench up so that you can't let go and release yourself from the circuit. This happened to me once, so I can speak from experience – that's another story.

If you play around with the inside workings of electronics and certainly radio transmitters, you should be aware of the latent dangers within. Hopefully, my few words of wisdom will help you stay alive.

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■ History

Ross A Hull – VHF Pioneer

John Martin VK3KWA
PO Box 2175, Caulfield Junction VIC 3161

The annual Ross Hull Memorial VHF-UHF Contest is currently under way. Ross Hull's name is well known, but who was he, and why is there a contest in his honour?

Ross A Hull was born in Melbourne in 1902. He developed an early interest in radio and was licensed as OA3JU (later VK3JU). At the age of twenty, he was the first Australian to hear signals from American amateurs.

Ross visited the United States in 1926, in his capacity as secretary of the WIA. The ARRL was quick to recognise his talents, and appointed him to the position of assistant technical editor for *QST*.

Ross returned to Australia in 1929 to take up the position of technical editor for *Wireless Weekly*, which was edited by his brother, A Galbraith Hull (*Wireless Weekly* is, of course, still with us – better known nowadays as *Electronics Australia*). But, within two years, he was back in the United States as Associate Editor of *QST*, a position which he held until his untimely death in 1938.

As associate editor, Ross spent much time in the ARRL laboratory, developing new equipment for use in W1AL, the ARRL's experimental station. His main interest was in the UHF spectrum which, in those days, meant anything above 30 MHz.

All of his early work was on the five metre band (56–60 MHz). But, in 1934, the FCC gave approval for amateur operation on any frequency above 110 MHz, and he began to experiment on two new bands, 112 MHz and 224 MHz. (1)

Improved Techniques

In the early 1930s, most amateur equipment was built in "breadboard" style: all of the components were mounted on a block of wood. Sometimes



Ross A Hull

there was a front panel – also made of wood – but usually not.

This type of construction was quick and easy, but it left a great deal to be desired on bands like five metres. Component leads were too long, and the lack of any shielding caused instability and feedback problems.

Ross recognised the need for improved construction techniques: his projects were solidly constructed on metal chassis. Rather than mounting everything in a row, with long connecting leads, he often mounted valves sideways or upside down to make the lead lengths as short as possible. His projects were described in detail in *QST* and led to a significant improvement in the performance of homebrew equipment.

Ross also led the way in the development of receiving techniques. He popularised the use of band-spread tuning at a time when most receivers had

very fast tuning rates and it was difficult to tune them accurately. He also popularised the use of superhet receivers. But superhets were expensive, and Ross was aware of the need to get the best performance from the smallest number of parts. Many of his projects used super-regenerative detectors which, at the time, were an excellent compromise between performance and cost. (2, 3)

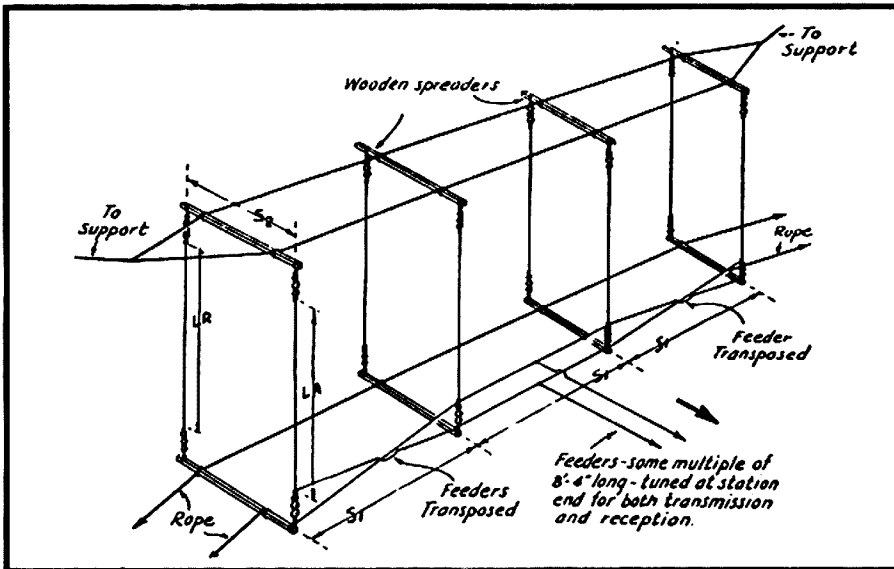
The typical five metre transmitter at the time was a modulated oscillator using a single valve. These transmitters were quite unstable and most stations produced as much FM as AM. By the mid 1930s there were serious QRM problems on five metres, as stations drifted, wobbled and splattered across the band.

Ross understood the need to improve frequency stability and reduce operating bandwidths. If transmitters could be made more stable, receiver bandwidths could be reduced. The benefits would be less interference and a much better chance of hearing more distant stations. Ross described transmitters using separate oscillator and amplifier stages to reduce frequency pulling and FM, and designed receivers with improved selectivity. (2)

Better Antennas

In the early 1930s the average five metre station was capable of working about 15 miles. But, in August 1934, Ross amazed his colleagues at *QST* by announcing that he had worked from Hartford to Boston – a distance of 100 miles. His secret was the antenna. At the time everyone used vertical antennas, but Ross put up a beam. It was a simple antenna by today's standards – four quarter-wave radiators fed in phase with four reflectors – but it made a startling difference to station performance. (4) The word spread and before long the distance records were tumbling.

This was a milestone: the beginning of the end for the "line of sight" theory of VHF propagation. We can still learn from it. Even today, more than sixty years later, a good many amateurs would be amazed if they threw out their verticals and put up a beam!



56 MHz beam antenna used by Ross Hull (Ref 4).

The Big Discovery

Ross had observed that signal strengths varied over time: a signal could be strong today and gone tomorrow – or it could be present in the morning but absent in the afternoon. To find the answer, he now turned his attention to a detailed study of VHF propagation.

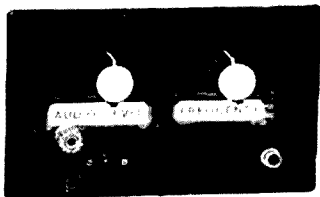
In March 1935 he built the equivalent of a chart recorder. (5) He fed the output of a receiver to a meter, and focused the image of the meter needle through a slit onto a strip of photographic film. The film was drawn slowly past the slit by a gramophone motor. This enabled him to correlate signal strength with other data,

and it became clear that signal variations were associated with changes in atmospheric pressure and moisture. This led to the discovery that VHF signals are refracted in the lower atmosphere, in much the same way as light rays.

This was a major scientific discovery, on a par with the discovery of ionospheric reflection on HF frequencies. But it was made by an amateur with no scientific training, using home-made equipment.

Ross published his findings in *QST* (6, 7), and they led to a flurry of experimental activity and another dramatic increase in VHF record distances. Within a short time, five metre contacts were being made half way across the country – a far cry from just a couple of years before, when even the most die-hard experimenters thought that VHF would never be useful for anything other than chatting across town.

Ross applied the same techniques – stable oscillators and beam antennas – to the 112 and 224 MHz bands. As early as 1934 he had succeeded in working over 75 miles on 224 MHz. (8) As more amateurs adopted his techniques, it was



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It's time to reach for the soldering iron! At left top is an audio filter project by Harold Hepburn, VK3AFQ, which we present for you this month. We also dive into history to test the dear old Astatic D104 microphone — but guess what? We tested a *new* one! It seems nobody thought to tell 'em to stop making them, so...

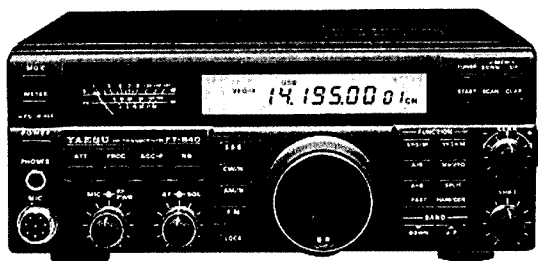
January's R&C has lots of great features of interest to amateur radio operators. Here are some of them...

- **REVIEW:** Shack supplies. They're all made here, both linear and switch-mode. Are they any good?
- **ANTENNAS:** We have not one but *three* antenna project stories this month. One may suit you...
- **REVIEW:** ADI AT-200 two metre FM hand-held. Well, no, it's not a big brand — but that doesn't stop it!
- **MACQUARIE ISLAND:** Tom Stokes, VKØTS, spent a year in a true wilderness. He concludes his report.
- **COMPETITION:** You could win a great new Icom IC-40S or a Magellan 12-channel GPS receiver!
- *As usual, we have our three DX columns, mods and more... the best stories and regulars every month!*

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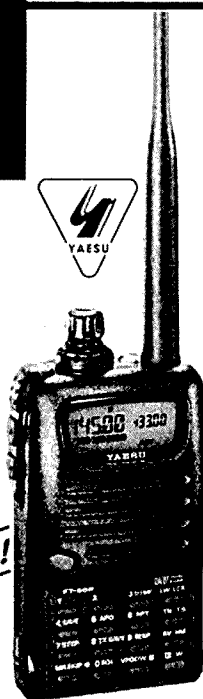
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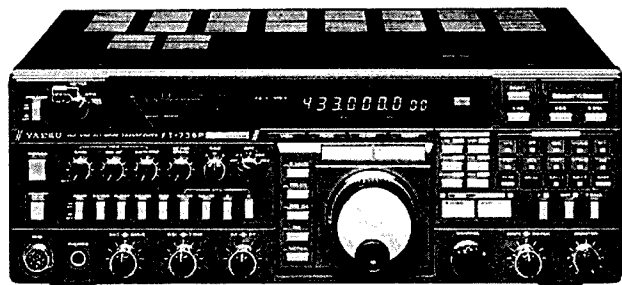
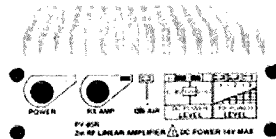


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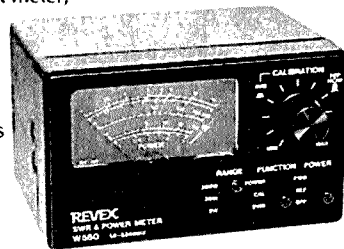


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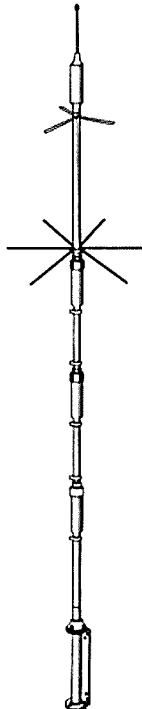


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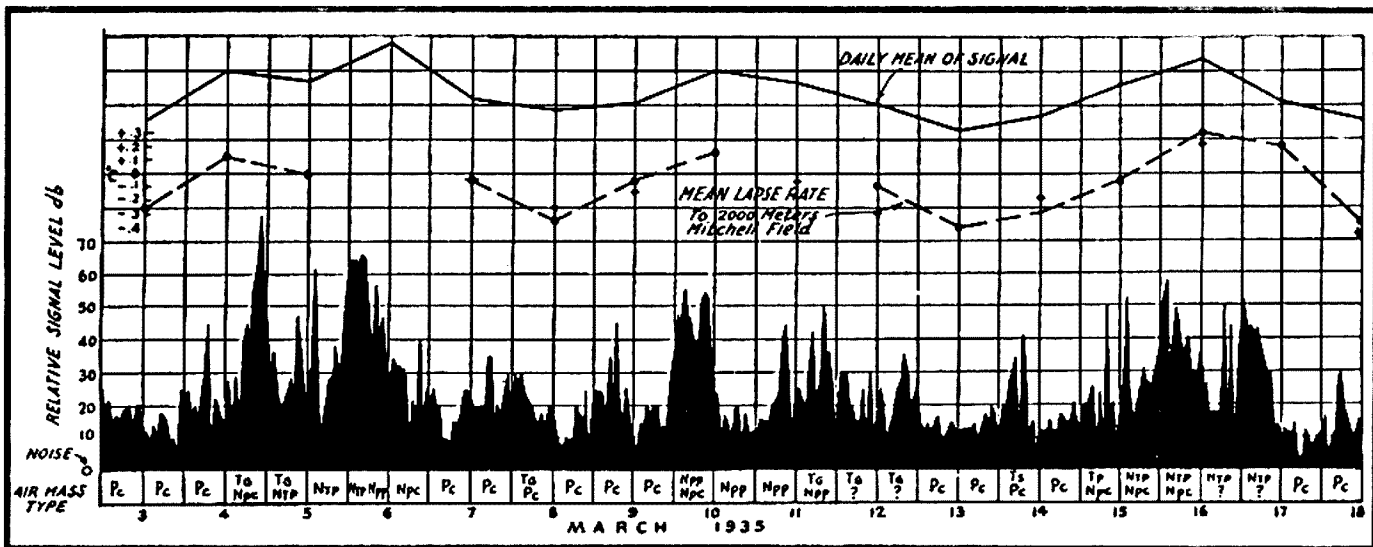


Chart showing direct correlation between atmospheric lapse rate and the strength of received signals (Ref 6).

not long before the 112 and 224 MHz bands started to deliver the same kind of DX that had been achieved on 56 MHz.

Ross was a man of many talents. Apart from his amateur radio experiments, he was a talented pianist, artist and photographer. His interests also extended to astronomy – he built several reflecting telescopes – and to radio controlled model aircraft.

He was particularly interested in television, and caused quite a stir when he received good pictures from the experimental television station operated by NBC in New York, 100 miles away.

Sadly, it was his interest in television that was to bring a sudden end to his life on 13 September 1938. He had built a television receiver which had its power supply in a separate cabinet underneath the table. He reached under the table to turn on the power switch, and was electrocuted by the 6000 volt CRT power supply. So ended the career of one of the most capable and intelligent experimenters in the history of amateur radio.

Nobody knows what Ross may have achieved if his life had not been cut short. If he were still alive today, no doubt he would still be trying to push the frontiers even further: better techniques, better antennas, higher frequencies, and – above all – greater distances.

References

(1) "Firing Up on the Newly Opened Ultra-High Frequencies", QST Sept 1934.

- (2) "New Equipment for the 56 Mc Station", QST Aug 1934.
- (3) "A New Receiving System for the Ultra-High Frequencies", QST Nov and Dec 1935.
- (4) "Extending the Range of Ultra High Frequency Amateur Stations", QST Oct 1934.
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- (6) "Air-Mass Conditions and the Bending of Ultra High Frequency Waves", QST June 1935.
- (7) "Air Wave Bending of Ultra High Frequency Waves", QST May 1937.
- (8) "Progress on the Ultra High Frequencies", QST Jan 1935.

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WIA News

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of November 1997:

L21064	MR C P MANN	VK2ICV	MR N HACKO
L21065	MR A GHAZANFAR	VK2IKY	MR D B REED
L21066	MR S N WALKER	VK2ILC	MR R E RANDALL
L30967	MR J REARDON	VK2JBH	MR J B HERDEN
VK1WN	MR W R NORRIS	VK2KWA	MR W R ALFRED
VK2CAT	MR G RYAN	VK2XCI	MR N J MCMILLAN
VK2DAO	MR D L CRAIGIE	VK3VDP	MR D PENDERGAST
		VK4KGP	MR D J HOLDER
		VK6KAR	MR D J GRIMBLE
		VK6NGW	MR G B WHITE
		VK6NZ	MR J J CUNLIFFE
		VK6PL	MR P H LONG

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Amateur Radio Annual Index 1997

A lot of material was published in *Amateur Radio* during 1997, including amateur radio news, members' experiments, construction projects, experiences and special interest columns. If you see an item in this annual index, and cannot locate the relevant copy of *Amateur Radio*, back issues of the magazine are available from the Federal Office to current WIA members at \$4.00 each, postage paid to anywhere in Australia.

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■ History

A Man of Vision

An Early Wireless Experiment in Western Australia (and the experimenter)

Dave Hanscomb VK6ATE.
PO Box 39
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In looking back through the history of wireless in Australia, at the turn of the century (just before Federation) we find mention of such eminent experimenters as F H Leverrier who carried out radio experiments in Sydney in 1900, and H W Jenvey who, in April 1901, transmitted a wireless signal across Port Phillip Bay (later making contact with HMS St George, an escort ship for SS Ophir conveying the Duke and Duchess of York to Australia for a State visit). Incidentally, on board another escort, HMS Invictive, was a young telegraphist on his first voyage, George A Scott, who was destined to become Radio Inspector for Western Australia in 1918, but that's another story! W P Hallam and "Pop" Medhurst (Tasmania) also made contact with HMS St George.

However, very little (if any) mention is made of an earlier experiment carried out some 2500 miles (4000 km) to the west, in Western Australia.

The "WIA Book Vol 1" records: "*Oct 11th (1899) G P Stevens (GPO Telegraphs Branch) conducted wireless telegraphy experiments between the Royal Yacht Club and a police launch on the Swan River, WA.*"

What was the purpose of these experiments? And what of the results?

To understand the situation, it is necessary to digress somewhat. Rottnest Island, only 18 km west of the port of Fremantle, is one of Western Australia's best-loved summer playgrounds. But it hasn't always been a fun place. Last century it was a prison for Aborigines, as well as having a lighthouse and pilot station to guide ships away from the dangerous reefs.

As a ship got close to the island, it would signal the pilot on Bathurst Point. He would then sail out, board the ship and steer it safely to Fremantle. Communication was mainly by boat but, if someone was sick and needed a doctor,

then the people on Rottnest had to fly huge flags during the day, or light a bonfire at night, to get their message across.

In 1879, a heliograph was introduced to exchange messages between Rottnest and Fremantle. The only communications link of its kind in the entire Australian telegraph system, it used mirrors and sunlight to flash Morse-code messages. Of course, it only worked when the sun was shining; on cloudy days, and at night, it was back to the flags and fire!

It took a tragedy to bring the telephone to Rottnest Island.

In July 1899, the ship "City of York" was wrecked off Rottnest. Eleven men drowned and, because of a series of events, the authorities on the mainland were not notified until the following day. The people of Perth were shocked and demanded better communication with Rottnest.

The "WIA Book Volume 1" records that: "*On March 27th 1899, Marconi had successfully transmitted wireless telegraphy across the English Channel.*"

And, on page 1 of "The Western Wireless" (Vol 4 No 76) of 29 September 1926 appeared the following article:

"WIRELESS TO ROTTNEST.

Twenty-Seven year old experiments

"Australian experimenters during recent weeks sent thousands of words through the ether to American 'Hams'. The percentage of error was very low, and the amount of power used was, in many cases, less than that used in an ordinary household electric light. The Trans-Pacific Tests stand in an interesting light when compared with some of the early tests made by the pioneers of the science.

"One such early experimenter, to whom the thanks of the younger generation of experimenters is due, is Mr G P Stevens, one-time manager and electrician for the State Government Postal and Telegraph services.

"An interesting document dated October 26th 1899, and headed: 'EXPERIMENTS BY THE TELEGRAPH BRANCH OF THE GENERAL POST OFFICE TO ASCERTAIN THE PRACTICABILITY OF ESTABLISHING COMMUNICATION BY THAT SYSTEM BETWEEN ROTTNEST ISLAND AND THE MAINLAND' was presented to both Houses of Parliament, 'by his Excellency's Command'.

"This document reads: 'Memorandum for the Superintendent of Telegraphs'

"With the co-operation of the Police Department, and assisted by Mr Knox of the Telephone Branch, and Messrs Rossiter and Phillips, I carried out a series of experiments on the 11th inst with a view to testing the distance to which it was possible to signal without wires with the apparatus at present at my command, viz a six-inch spark coil as a transmitter, and unexhausted coherers, made in our own workshops, as receivers. The results were not so satisfactory as I had anticipated, but were quite sufficient to confirm me in my opinion that, with proper appliances, the system would be quite reliable, and meet all the requirements for conveying shipping intelligence to and from Rottnest.

"Using a vertical conductor suspended from the flagstaff of the Royal Yacht Club, at a height of 40ft (12 metres) above water level, and a similar conductor supported by a temporary mast on the police launch, we commenced signalling across the water at 200 yards (180 metres) then, putting the launch under slow steam, the distance was gradually increased, communication being kept up all the time, until at about three-quarters of a mile (1.2 km) the coherers failed to respond. Careful tests were made, and all possible variations of spark length tried, but no effective waves could be detected outside the three-quarter mile radius. By means of flag signals, the launch was instructed to return slowly, and immediately it entered the magic circle, the electric waves were again picked up, and steadily increased in volume as the launch approached; the Morse code being readily read throughout.

"Tests were also made to ascertain if the law governing the distance to which signals could be sent with a given length of vertical conductor, as stated by Mr Marconi and other workers in England would hold good for the conditions tried

here: and I am pleased to say that the conclusions arrived at coincided exactly with those obtained with the more perfect apparatus employed in the experiments carried out recently in England and France, that is to say we find that, other things being equal, the distance over which it is possible to signal varies with the square of the height of the vertical conductors. Applying this law in our own case, and assuming that perfect signals were obtained at half a mile, with conductors 40 feet high, we should require conductors 160 feet (48 metres) high to work eight miles, and 196 feet (58.8 metres) to work 12 miles (19 km) or, practically, to establish communication between Rottneest and the Mainland, it would be necessary, with the apparatus available in this colony, to erect masts at each station at 200 feet (60 metres) high: this would entail considerable expense: and knowing that equal or better results would be obtained with masts of 40 or 50 feet high by using apparatus supplied by Marconi's Company, I would not recommend attempting long distance experiments before communicating with that Company.

"The fact that our distance limit was reached under a mile does not, in the opinion of myself or my co-workers, in any way tend to discredit the reports of the success of Mr Marconi, or shake our confidence in the utility of the system as a cheap and reliable means of signalling between ships at sea, or for coastal service between the mainland and isolated positions.

"The short distance over which we have been able to signal, as compared with the latest cable advices from England, can easily be accounted for when we remember that in all Mr Marconi's experiments, he has used, at his transmitting station, a ten-inch spark coil, which would emit electric waves of far greater amplitude than our six-inch coil: and in the matter of coherers (the sensitive receiving tubes) he has had the advantage of having at his command the skill of first-class scientific instrument makers, while we have been unable to procure the assistance of an ordinary glass-blower: and notwithstanding that Mr Knox succeeded in constructing an exhaust pump that did its work admirably, when it came to sealing off, with the wires and pole-pieces in place, it was found that the glass tubing procurable here was not

suitable, the expansion of the wire that passed through the sealed ends of the tube caused minute cracks that rendered it impossible to secure a reliable vacuum, which, according to expert opinion, quadruples the sensitiveness of the tube.

"Apart from these drawbacks, which we could of course overcome by expending a few pounds, it would be unreasonable to suppose that we, with the very meagre description of the system available through the scientific papers, could, in a month, attain the perfection of detail that has taken Mr Marconi, assisted by some of the cleverest electricians in England, five years to accomplish.

"On the whole, the results attained here fully confirmed the practicability of signalling without wires, and the reports to hand clearly indicate that its sphere of usefulness is extending every day. Writing in the "Navy and Army Illustrated", giving details of the trials of the system during the recent naval manoeuvres, Commander E P Statham RN, in his closing remarks, says: 'Reaching the convoy at four o'clock one afternoon, and leaving it and the other cruisers in charge of the senior captain, the 'Europa' hastened back towards another rendezvous, where the Admiral had intended remaining until he should hear whether the enemy had found and captured the convoy. But scarcely had she got well ahead of the slow ships, when the 'June' called her up, and announced the Admiral coming on to join the convoy. The 'June' at this time was fully sixty miles distant from the 'Europa'. Now imagine a chain of vessels, sixty miles apart: only five would be necessary to communicate some vital piece of intelligence from a distance of 300 miles (about 480 km), receive and return their instructions, and act immediately, all in the course of half-an-hour or less.

"This is possible already. Doubtless, a vast deal more will be done in a year or two, or less: and meanwhile, the authorities should be making all necessary arrangements for the universal application of wireless telegraphy in the Navy. The outfit is not expensive – 120 pounds would probably fit up any ship, and it is sure to become cheaper in time.

"In the face of reliable reports of this kind, I naturally feel somewhat surprised and disappointed that my suggestion to adopt Marconi's system for the Rottneest service did not meet with the support I

anticipated from the Government's consulting engineer (Sir William Preece) who, strange to say, had, in a paper read before the Society of Arts prior to his having been consulted by our Government, distinctly stated that there could be no question of the commercial value of Marconi's system for such services as were contemplated in my suggestion.

"We shall, however, find it necessary, I think, in the very near future, to establish a 'wireless telegraphy' station at Rottneest, in addition to the cable service, for the purpose of communication with passing or approaching ships: and the experience gained in our late experiments will then, I hope, bear fruit.

"I desire to express my grateful thanks to the Postmaster General for so readily granting me a free hand in conducting these experiments. The whole subject, as you are aware, is surrounded with a certain amount of mystery: indeed, I found, at the outset, that to succeed at all, it was necessary to draw heavily on our own inventive resources, which has transformed what might otherwise be considered tedious work into a pleasant and fascinating break in my office routine.

"I am sure the Postmaster General will also recognise that time so spent is by no means wasted, as the knowledge gained must tend to the general efficiency of the Department. Should he desire at any time to have the system practically demonstrated in a suitable room to members of the Government, or others interested, it is only necessary to intimate his wish to have it carried out.

"I cannot conclude without again referring to the valuable assistance I have received from Mr Knox, Inspector of Telephones, Mr Phillips, Batteryman, who has become quite an expert in the construction of secondary batteries, and especially Mr Bosser, of the Mechanical Branch, who, besides making any apparatus that wasn't in stock, has helped me out with many knotty problems that I could discuss with him as an intelligent electrician."

G P Stevens
Manager and Electrician

It would appear that, following the tragedy of the "City of York" he had either taken on the task of investigating "wireless" for improving communication between Rottneest and the mainland, or had been asked to do so by the

Government of the day 'by His Excellency's Command'.

It was not to be. Despite his faith in the value of wireless, his report appeared to bear no weight with the Government of the day. For, by March 1900, the WA State Government had laid a single circuit submarine cable from Cottesloe to Rottneest, and connected it to a small exchange on the island. Three years later it was handed over to the newly-formed Fremantle Port Authority (in 1936 it became the last pre-Federation exchange to be taken over by the PMG Department).

Here, surely, was a man of vision. It seems incredible that, just over six months after Marconi had crossed the English Channel by wireless telegraphy, that someone half a world away should have confidence in the value of wireless. It seems that he had anticipated by about a decade what would become the Coastal Radio Service.

In reading this, one can only wonder at the skill of Stevens' assistants in making the required components. Surely there were not many components held in stock!

How long had it taken for "the scientific papers" to reach Perth? Just how much was the "meagre description"? Had Stevens and/or the Department carried out tests before? Were they to do so again?

It seems a pity that, after all that effort, further wireless experiments would have been abandoned!

Who was G P Stevens? What did he achieve? What became of him?

Here is what I found out. George Phillip Stevens was born in England, at Keynsham, Somerset on 24 June 1861. He was the youngest of the family which arrived in Western Australia in 1868 when he was only seven years old. After some years schooling, he entered the Post and Telegraph Department on 13 April 1874 as a messenger boy at Toodyay, at the ripe old age of 13 years! Two years later he was transferred to Esperance Bay as Officer-In-Charge, pending the completion of the Intercontinental Telegraph Line. At the age of 17, he was appointed station master at Bremer Bay and, in 1882, when only 21 years of age, he was promoted to be Station Master and Customs Officer at Israelite Bay. Four years later he was transferred to Eucla, on the South Australian border.

Eucla was then a most important link in the telegraph system which served to annihilate the distance between East and

West, but since fallen from its high estate owing to the installation of the wonderful "Wheatstone" system. He remained at Eucla for ten years, from here controlling the traffic during the boom days of the gold fields. He was recalled to Perth in 1896 to occupy the position of Manager and Electrician to the Telegraph Department.

It would have been in this capacity that, on 11 October 1899 he was to carry out the experiments mentioned previously. He was transferred to the Commonwealth Service in 1901, subsequently being promoted at a higher salary to be Electrical Engineer. During his tenure of this office, he incurred the displeasure of the permanent and political heads of the Department by strenuously opposing the indiscriminate use of condenser telephones, on the grounds that they seriously interfered with the efficiency of the telegraph service. He was subsequently charged with incompetency, the chief indictment being waste of money through his advocacy of an additional telegraph line to the gold fields at a cost of 3,900 pounds and the employment of more telephone attendants than was considered necessary.

A special board was appointed to inquire and report as to his fitness to satisfactorily carry out the duties assigned to him. The Board of three included a junior officer from Sydney and a mail officer possessing no technical knowledge. The officer upon whose report the inquiry was based was present watching his case throughout the investigation, but Mr Stevens had neither departmental nor legal representation.

After six weeks, occupied chiefly in seeking weak points in the administration, the Board reported unfavourably, and Mr Stevens was informed that he would be transferred to the position of Comptroller of Stores. Simultaneously with this, it was announced that the junior member of the Board would succeed him as Electrical Engineer!

Mr Stevens protested against the decision, claiming his right to be retired under Section 6 of the State Superannuation Act, and in this he was supported by the State Government and Sir John Forrest, the latter characterising his treatment as unparalleled in the annals of the British Civil Service. Obtaining Leave of Absence, Mr Stevens proceeded to Melbourne to personally urge his claim,

which was ultimately granted, and he retired in 1906 with a pension reflecting his 32 years service.

Probably about the turn of the century he married. It was noted (*The Cyclopaedia of Western Australia Vol 1 (1912)*) that he had four sons and five daughters; was that the extent of his offspring?

In 1908 he became secretary of the Civil Service Association, and held the position until he retired in November 1932.

Mr Stevens' interests were not confined to service matters. He was a member of Claremont Municipal Council for over 25 years, and held the office of Mayor during the four years of the 1914-18 war. He devoted a deal of his time to Freemasonry, and was formerly one of the foremost bowlers in the state. He captained the champion Four of the State in 1906 and won the association singles in 1910, in which year he was a member of the team of bowlers sent from this State to the Commonwealth Carnival. He also had the honour of being one of the four selected captains to play in the Test Matches against the first visiting team from the Eastern States.

A member of the West Australian Historical Society since its inception in 1926, he was later elected to the council and afterwards became a vice president. Right up to the time of his last illness, he regularly attended the Society's meetings and, after the reading of any paper, his wealth of information on State history enabled him to speak authoritatively on relevant incidents.

Although not a recognised "experimenter", his association with telegraph may well justify our description of him becoming a "Silent Key" at the age of 80 years, on 20 November 1941.

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The CLARA Gala or CQ Polar Bears

Gwen VK3DYL

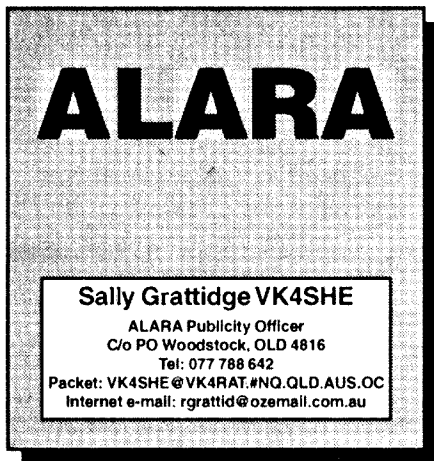
I headed over to the Canadian YLs' Convention near Toronto last September, with a list of things I wanted to see and do like catch up with HF and e-mail friends, see some polar bears, icebergs, the Northern Lights, Niagara Falls and a Newfoundland dog, as well as eat fresh crab and lobster in the Maritimes and experience the wonderful Fall colouring. I didn't anticipate having my first helicopter ride, however!

The trip was arranged around the CLARA Gala, held to celebrate CLARA's 30th Birthday, so as to catch up with YL friends and meet others. I particularly wanted to meet Minnie VE3DBQ, a white stick operator and VP of CLARA, and catch up again with Lois WB3EFQ, who was driving up from Pennsylvania, and Elizabeth VE7YL coming across from Vancouver. Dave ZLIAMN and Aola ZL1ALE were to be there, also Raija SM0HNV, all of whom were at the ALARAMeet in Perth, and I was looking forward to meeting Ruth IT9ESZ, whom I had spoken to on a number of her DXpeditions, plus some of the VE girls who had been of great help to me on e-mail in planning my trip.

Eight different countries were represented by 47 YLs, 20 OM's and a guide-dog-in-training, so there was much laughter and chatter over the three days. The buffet style meals were superb and there was entertainment each night (I must confess I preferred to sit and try to chat rather than line dance!). Eight members of ALARA attended, though I was the only home-grown one!

Prior to arriving at the Gala, I had seen a little of Nova Scotia, Prince Edward Island and Newfoundland. Therefore, I was able to cross the fish and the dog off my list but I was too early for the Fall colours. Thanks to a friend on the Island, I kept an early morning 40 m sched with some of the guys back home. We bought some live lobsters one night but I refused to carry the bag home (they wriggled!) I didn't refuse to eat them later, though! I was even taken to a White Elephant Sale and the bargains looked just the same as here.

I went on a 12 day cruise up the coast of Labrador, and that took care of the icebergs and Northern Lights – some whales, dolphins and puffins were thrown in as a bonus! The ship I travelled on was a coastal working vessel which stopped at about 48 different settlements en route loading and off-loading cargo, most of which was timber and fresh produce, though at times we carried the odd dog, skidoo and boat. One person even had



his whole new house delivered to him in bits, including the bed, heater and TV set.

Of the 19 passengers on the cruise, six were radio amateurs! This enabled me to have my one and only 2 m contact – from one side of the ship to the other. We made our own entertainment at night – three of the crew played guitars whilst we sang. We went through the Newfie ceremony of “kissing the cod” (a dried cod-fish, if you please!) and downing a tot of Screechers rum. We all told the worst jokes we could think of, and, to cap it off, King Neptune came aboard one night even though we weren't anywhere near the Equator!

The further north we went, the colder and more barren it became and I certainly didn't envy the people who lived out their lives in the small fishing settlements dotted along the coast. However, the folk we met on our numerous trips ashore were very friendly. So were the mosquitoes! The sunsets were awe inspiring whilst later the Northern Lights danced across the skies.

Niagara Falls impressed me in spite of the other tourists. My hotel room overlooked the Falls so I had a good view of them at night when they were illuminated in different colours. In spite of being issued with a plastic coat, I got soaked on a trip on the *Maid of the Mist* to the foot of the Falls – the spray and noise were unbelievable.

Last, but not least, I went up to Churchill, Manitoba, on the shores of Hudson Bay, looking for the polar bears who gather there at this time each year waiting for the ice to form on the Bay so they can go out hunting seals, etc. Some bears arrive a bit early and tend to wander round the town and the rubbish dump looking for alternative food.

To counter this, there is a curfew at night for all children to be indoors whilst Polar Bear Surveillance teams patrol the streets. Any bears caught in or near the town are put in gaol! Truly, there is a large corrugated tin building on the outskirts of town where the bears are put in separate cells and kept there until the ice forms and they can be lifted out to it by helicopter. Each bear caught is scientifically tagged so an accurate record can be kept of their age and wanderings.

To see the bears in the wild, I spent a couple of days travelling on the Tundra in a Tundra Buggy – like a large bus mounted on 6 ft diameter wheels which slowly chugs its way across the tundra regardless of the terrain, be it lake, swamp, rocks or whatever. We found three bears lazing round in one particular area and they obligingly spent a little time playing with each other – they even tried to play with us in the Buggy!

To see more bears I made my first helicopter flight and it wasn't as bad as I'd expected! We saw seven more bears, once again all just lying around waiting for the ice. No snow, though the nights were down to minus two degrees C and the days up to plus two. I don't think the bears would have had much longer to wait to go hunting!

For those who want to “chill out” this year, the Norwegian YLs are organising a YL Meeting at Longyearbyen on the island of Svalbard (JW-land to all you DXers!). It is situated north of Norway above the Arctic Circle, at 78 degrees, and is also home to polar bears. Hopefully I'll be there in spite of the fact that I hate the cold.

New Member

Gwen also scored another American member for ALARA from the Gala – Carol WD8QDG. Our Sponsorship secretary, June VK4SJ, is sponsoring Carol herself. Welcome to ALARA, Carol.

New Callsigns

A new H call on the air is Teri VK4HYL. Teri achieved her licence in six months, starting with no previous knowledge of electronics. She also moved house and had a baby while she was studying. Not a bad effort, Teri.

Distinguished

Last year Mary VK4PZ and OM Gordon VK4GM received WIAQ Distinguished Service Awards, presented to them by Councillor Peter Dawson. Congratulations Mary and Gordon. ar

Have you advised the ACA of your new address?

I wish all my readers a very prosperous New Year. Looking back, propagation has certainly been in the doldrums. It has been frustrating trying, not only to work some DX, but more so trying to find new DX. I am in that group that has passed the 300 countries mark, looking to push on, and to work those most elusive few remaining.

Listening on the bands, I find that 20 and 40 metres are now beginning to hum faintly, especially after 0700 UTC. There has also been spasmodic activity on 15 metres. I have also heard operators talking about a particular Net operating on 10 metres. Speaking personally, I have worked Europe and North America on both 20 and 15 metres.

Questions and Answers

The fees for JARL Awards have been increased to \$US16.00 or 12 IRCs.

The WIA sponsors it's own DXCC Award. It is not necessary to bundle up 100 plus QSL cards and send them to a prescribed overseas destination, at a horrendous cost. The rules for application are identical, as is the prestige. My records show a significant percentage of overseas members of the WIA DXCC.

To make my job a little more enjoyable,

Awards

John Kelleher VK3DP
 Federal Awards Manager
 4 Brook Crescent, Box Hill South, VIC 3128
 Phone (03) 9889 8393

could I suggest that, when you upgrade, or change your call sign or address, you take the time to let me know so that my records can be kept up to date.

I have also had feedback about local awards. It seems that there are quite a few that are alive and kicking, but the organisers seem to be backward in coming forward with details of the awards that they have on offer.

Switzerland - The Helvetia Award

Confirm contacts with all 26 Cantons and half Cantons since 1 January 1979. This is a beautiful, multi-coloured award showing the flags of each Canton on its border. Issued in four categories: (1) phone, CW or mixed; (2) all CW; (3) RTTY; and (4) SSTV. Separate awards for HF and any single VHF/UHF band. Cards must be sent, together with QSO information, to the sponsor. The award is free, but sufficient IRCs should be sent to cover the cost of returning your cards.

The HF manager is Kurt Bindschedler HB9MX, Strahleggweg 28, 8400 Winterthur, Switzerland. The VHF/UHF Manager is Rudolph W Heuberger HB9PQX, Buchserstrass 7, CH-5034 Suhr, Switzerland.

The Cantons are as follows:

- AG Argau
- AI Appenzell Inner Rhoden
- AR Appenzell Outer Rhoden
- BE Berne
- BL Basle Country
- BS Basle City
- FR Fribourg
- GE Geneva
- GL Glaris
- GR Grisons
- JU Jura
- LU Lucerne
- NE Neuchatel
- NW Nidwalden
- OW Obwalden

- SG St Gall
- SH Schaffhausen
- SO Solothurn
- SZ Schwyz
- TG Thurgau
- TI Ticino
- UR Uri
- VD Vaud
- VS Valais
- ZG Zug
- ZH Zurich

The Helvetia Contest, held annually on the last full weekend of April, is an excellent time to work the rarer Cantons as portable operations often take place.

Thailand - The Siam Award

Contact and confirm 10 HS stations. No time limit. SWL OK. GCR and 10 IRCs for surface mail, 15 for airmail, should be sent to Hans D Hollstein HS1BG, Awards Manager, 86/1 Sukhumvit soi 23, Bangkok 10110, Thailand.

Greece - RAAG Series

General requirements: Fee for each award is \$US5.00 or 10 IRCs. Endorsements are four IRCs. Apply to RAAG Award Manager, PO Box 3564, 10210 Athens, Greece.

Awards are issued for SSB, CW, mixed or single mode.

Athenian Award

Issued for contacts with 25 stations in the Athens area. Issued for any mode in the following three classes:

- 1st class: QSOs on 160 and 80 metres;
- 2nd class: QSOs on 40 and 30 metres; and
- 3rd class: QSOs on other bands.

Endorsement stickers for each 25 new contacts.

Greek Islands Award

Work and confirm 10 contacts in at least three groups of the Greek Islands as listed below:

1. Crete
2. Dodecanese
3. Ionian
4. Cyclades
5. Sporades
6. Euboea
7. Lesbos
8. Khios
9. Thasos-Samothraki
10. Icaria-Limnos

Mixed mode or single band endorsement stickers for every ten different islands.

RAAG Award

For contacting stations located in Greece after 1 January 1975. Submit verified list of contacts with at least seven Greek stations from any of the nine call areas SV1 to SV9. No band or mode limitations.

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Contests

Peter Nesbit VK3APN

Federal Contests Co-ordinator
PO Box 2175, Caulfield Junction, VIC 3175
pnesbit@melbpc.org.au

A reader recently asked about the terms "busted callsigns" and "busted QSOs", as mentioned in the rules for the recent Stew Perry 160 m contest. He said, "Having never encountered the terms before, could you reveal the meaning of these colourful Americanisms in the next available column?"

I must confess that, after wading through contest rules year in and year out, one becomes somewhat blasé about the jargon, of which there is plenty. We casually talk about log duping, ten minute rules, the "usual declaration" and so on, not realising that to many, these terms may be rather obscure.

To help demystify the process, some years ago I devoted a whole column to explaining the various contesting terms, and outlined what the newcomer should expect to have to do. Perhaps it is time for a repeat.

Returning to the reader's question, a "busted callsign" is one which an entrant includes in his log, but is later found to be wrongly copied or unverifiable by the contest manager, and therefore disallowed. Similarly, a "busted QSO" is one where the exchange or other information is wrongly copied, and the QSO is disallowed as a result.

In the past, some of us have found that errors are often treated all too leniently by the log checkers, leading a few contesters to put speed ahead of accuracy. With the increasing use of electronic submission, all that is set to change. For example, just the other day I received a press release from CQ-Contest, outlining their new preferred way of receiving logs electronically. The information is repeated later in this column. Personally, I think electronic log submission is a marvellous step forward, and can't wait for it to be adopted as the usual method of entry for other contests as well. I have always detested all the fiddling around with reformatting, printing logs out, messing around with envelopes, and last-minute

Contest Calendar Jan - Mar 98

Jan 3-4	ARRL RTTY Roundup	
Jan 9-11	Japan DX CW (Low Band)	
Jan 10-11	VHF/UHF Field Day Contest	(Dec 97)
Jan 17-18	HA DX CW Contest	
Jan 23-25	CQ WW 160 m DX Contest	(Dec 97)
Jan 24-25	REF (France) CW DX Contest	
Jan 24-25	UBA (Belgium) SSB DX Contest	
Feb 7-8 Y	U DX Contest	
Feb 14	Asia-Pacific CW Sprint	
Feb 14-15	ARRL DX CW Contest	
Feb 14-15	PACC CW/SSB DX Contest	
Feb 20-22	CQ 160 Metre SSB Contest	(Dec 97)
Feb 21-22	RSGB 7 MHz CW Contest	
Feb 21-22	REF (France) SSB DX Contest	
Feb 21-22	UBA (Belgium) CW DX Contest	
Feb 22	High Speed Club CW Contest	
Mar 7-8	ARRL DX SSB Contest	
Mar 7-8	DARC 10 m Digital Contest	
Mar 14-15	Commonwealth Contest (CW)	
Mar 21-22	WIA John Moyle Field Day	
Mar 21-22	DARC HF SSTV Contest	
Mar 21-22	Bermuda Contest	
Mar 28-29	CQ WPX SSB Contest	

dashes to the post office. In contrast, e-mail is quick, cheap and efficient.

The benefits are not confined to entrants, as electronic submission also helps the contest manager. Electronic logs are tailor made for computer cross-checking, removing the need to manually wade through thousands of QSOs in paper logs, laboriously cross-checking one to another. Work is under way to standardise the formats for electronic logs, and I'm sure it won't be long before we see many contests employing this method of adjudication.

Of course there are many contesters who do not own computers, or are not connected to the Internet. Their continued participation in contests is vital, and their logs will always be gratefully received.

What will this do for contesting? More comprehensive checking will probably cause average scores to come down slightly, due to busted QSOs (now where did I hear that term?). Fortunately, statistics show that most single operators have a fairly low error rate, certainly lower than the average multi-operator or multi-multi entry. At least we know the results will be more accurate in future and, as far as the individual is concerned, there will be a real incentive to improve one's own copying skills.

For information this month, thanks to 9V1YC, I2UIY, JE1CKA, LA9HW, PA3EBT, ARRL, CQ-Contest, RSGB, and the High Speed CW Club. Until next month, good contesting!

73, Peter VK3APN

Asia-Pacific Sprint

CW: 1230-1430z, Saturday, 14 February

SSB: 1230-1430z, Saturday, 13 June

CW: 1230-1430z, Saturday, 17 October

In this series of sprints, the object is for stations in the Asia-Pacific region to work as many stations world-wide as possible within two hours, on 20 and 40 m CW. Suggested frequencies are (CW) 7015-7040 and 14030-14050, and (SSB) 7060-7080 and 14250-14280 kHz.

Output power is limited to 150 W. Exchange RST + serial number, and count one point per valid QSO. The called station (usually the CQer) must QSY at least 1 kHz after a CW QSO, or 6 kHz after an SSB QSO. The multiplier is the total number of prefixes, per WPX rules (ie each prefix once only, not once per band). Final score equals valid QSOs x multiplier. Post your log to: James Brooks, 26 Jalan Asas, Singapore 678787 postmarked within seven days, or e-mail an ASCII version to his new address at: jamesb@pacific.net.sg within 72 hours.

Rules and results will also be distributed by an automated info-server. Send an e-mail to: info-contest@dumpty.nal.go.jp containing #get ap-sprint.rule

ARRL DX Contest

CW: 0000z Sat to 2400z Sun, 14/15 Feb

SSB: 0000z Sat to 2400z Sun, 7/8 Mar

There is always plenty of activity in this popular contest. For this year only, to avoid clashing with several other popular contests, the CW section will run on the second full weekend in February (instead of the third full

weekend as usual). The phone section will run on the first full weekend in March.

The object is to work as many W/VE amateurs as possible on 1.8-30 MHz (no WARC). Single operator categories are: single band, all band, all band QRP max 5 W O/P, all band low power max 150 W O/P, and all band unrestricted. Single-band entrants who make contacts on other bands should submit logs for checking purposes.

Multi-operator categories are: single Tx, two Txs, and unlimited. In the single and two Tx categories, once a transmitter has begun operation on a band it must remain on that band for at least 10 minutes. Listening time counts as operating time. See *QST* or www.arrl.org for more comprehensive rules governing multi-operator entries.

Exchange RS(T) and a three digit number indicating approximate output power. W/VE stations will send RS(T) and state/province. Score three points per W/VE QSO. The multiplier is the sum of US states and District of Columbia (DC) (except KH6/KL7), NB (VE1), NS (VE1), PEI (VE1 or VY2), PQ (VE2), ON (VE3), MB (VE4), SK (VE5), AB (VE6), BC (VE7), NWT (VE8), YUK (VY1), NF (VO1), and LAB (VO2) worked to a maximum of 62 per band. The final score equals the total QSO points times the multiplier.

Entries with more than 500 QSOs must include cross-check (dupe) sheets. ASCII logs on DOS disk are welcome in lieu of a paper log. If using CT, send the CALLSIGN.ALL file (not the .BIN file). An official summary sheet or reasonable facsimile with a signed declaration is required with all entries.

Alternatively, logs can be forwarded via the Internet to contest@arrl.org, or anonymous ftp to [ftp.arrl.org](ftp://ftp.arrl.org). Include your summary sheet file, making sure it includes all pertinent information (the rules do not mention if a signature is required for e-mail and ftp entries – due to the impracticality of a signature in these cases, it is probably safe to assume it is not).

Multi-operator entries must list all operators. Entries must be postmarked within 30 days after the last contest or they will be classed as check logs (no exceptions)! Entries received after mid-June will not make *QST* listings. Mark the envelope CW or Phone, and send the log to: ARRL Contest Branch, 225 Main Street, Newington, CT 06111, USA. Certificates will be awarded to the top scoring stations in each country and category, and plaques to the top world-wide and continental stations.

PACC CW/SSB DX Contest

1200z Sat to 1200z Sun, 14/15 Feb

This is a very popular European contest,

with phone and CW held on the same weekend. The object is to work as many Dutch stations as possible on 160 to 10 m, excluding the "WARC" bands. Categories are single and multi-operator; SWL. Only CW contacts are eligible on 160 m. Stations may be worked only once per band, regardless of mode.

Exchange RS(T) plus serial number; Dutch stations will RS(T) plus a two letter province code. Possible codes are: DR FR GD GR LB NB NH OV UT FL ZH ZL. Score one point per Dutch QSO. Contacts must be confirmed by TU, OK or QSL. Final score equals the total QSO points times the total Dutch provinces worked from each band (max 72). Mail logs with summary sheet and declaration by 31 March to: Hans Timmerman PA3EBT, Nieuweweg 21, 4031 MN Ingen, Netherlands. Certificates will be awarded to the top scoring stations in each category and country, including second and third places where justified.

RSGB 7 MHz CW Contest

1500z Sat to 0900z Sun, 21/22 Feb

The object of this contest is to contact as many British Isles stations as possible on 40 m CW. Exchange RST plus serial number starting at 001; UK stations will add their county code. Oceania stations score 30 points per QSO, and the final score is the total QSO points times the number of UK counties worked. Include a summary sheet showing all standard details, plus a checklist if more than 80 QSOs are made. Send logs to arrive by 14 April to: RSGB HF Contests Committee, c/o S V Knowles G3UFY, 77 Bensham Manor Road, Thornton Heath, Surrey, CR7 7AF, England. Airmail is recommended, as late logs may be treated as check logs. Certificates will be awarded to the leading entrants in each overseas section.

High Speed Club CW Contest

**0900-1100z and 1500-1700z,
Sunday, 22 Feb**

This interesting contest is organised by the High Speed CW Club, and runs on the last Sunday in February. Bands are 80-10 m, and categories are HSC Members, non-members, QRP 5 W, and SWL. Exchange RST + HSC number or serial number. Score one point per QSO with own continent, and three points for DX. Stations can be worked once per band and period. Each DXCC country per band counts as a multiplier. Final score equals points times multiplier.

Send logs within six weeks to: Frank Steinke DL8WAA, Trachenbergerstrasse 49, D-01129 Dresden, Germany. The HSC web site is also worth a visit at <http://www.dutch.nl/wilbwk/index.htm>

Results of 1997 ARI DX Contest

(category, QSOs, mult, score)				
VK2APK	SO-CW	451	122	182783
VK8AV	SO-CW	127	75	45874
VK3APN	SO-CW	23	17	1994
VK4TT	SO-CW	23	13	1504

Electronic Submission of CQ-Contest Logs

by Doug KR2Q for the CQWW Contest Committee

1996 was the first year that we accepted electronically submitted (e-mail) logs, and we are very pleased with the results. We received 1224 individual log files on SSB and about 1100 on CW! However, 2000 logs (both modes), which were generated by computer, were submitted on paper only. PLEASE send a disk or e-mail entry if you use a computer. It is much easier for you to send us a disk or e-mail type submission than to send us paper. So PLEASE, if you use a computer to do your log, send us the FILES, not the paper. E-mailing is so easy and so inexpensive, there is no reason not to use it. Even if your log has less than 100 contacts, if you used contest software of any type, send us the file electronically! Our goal is to have every entrant, who used a computer to do their logging, send in a log file.

How To Submit Your Log

This year we are changing the preferred type of file which we would like to receive. We greatly prefer to receive a plain text, ASCII version of your log, rather than the binary or .BIN file. Acceptable ASCII formats include: CT software = yourcall.ALL; TR software = yourcall.DAT; Other fixed-column ASCII formats are acceptable. In case you're not sure just what this is, it is the file that looks exactly like a printed log; it has lots of columns including one for DATE, TIME, QSO NUMBER BY BAND, CALLSIGN, FREQ, EXCHANGE, NEW MULTS, POINTS, etc, and each QSO takes up one line.

We require TWO files for every electronic submission: a plain-text ASCII summary sheet; and your actual log of callsigns, bands, times, etc.

Be sure to NAME your files using your callsign. The summary sheet can be named: YOURCALL.SUM while the log itself can be named: YOURCALL.all or YOURCALL.dat, etc, depending on the type of file you send. Be sure to actually use your callsign and not the words, "yourcall." Eg: If your call is XZ1A, you would name your file XZ1A.all or XZ1A.dat. It is important to keep the correct SUFFIX (after the "dot"). CT uses .all and TR uses .dat. All types of ASCII files can be sent using regular e-mail.

For all types of submissions, be sure to put

the mode and the station callsign as the subject for each entry. When you send in your log, it will automatically be acknowledged by the server. If we have trouble reading your file, we may ask you to send a disk.

Submit your 1997 CQWW SSB log files to ssb@cqww.com. Submit your 1997 CQWW CW log files to cw@cqww.com. Submit any questions, at any time, to questions@cqww.com.

Remember:

1. We prefer ASCII files, NOT binary files.
2. Name the file using your callsign, eg KR2Q.all or KR2Q.dat.
3. Include a summary sheet file (yourcall.sum) with the log file.
4. Use YOUR callsign and mode (CW or SSB) for the subject (eg KR2Q SSB).
5. SSB and CW logs go to separate addresses (see above)! Do not send both

CW and SSB together!

6. The E-domain (cqww.com) is for the CQWW DX contest only (Oct/Nov), not the WPX, not the CQ-160, and not any ARRL contests.

You may forward any questions to me (KR2Q) at DougKR2Q@aol.com or, you may directly contact the Contest Director (K3EST) at K3EST@netcom.com

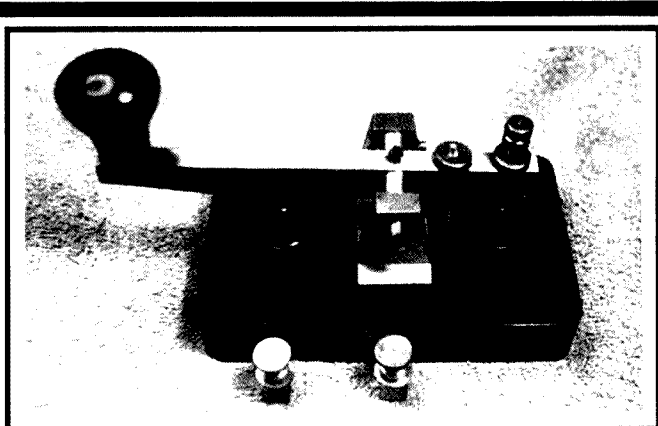
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Pounding Brass

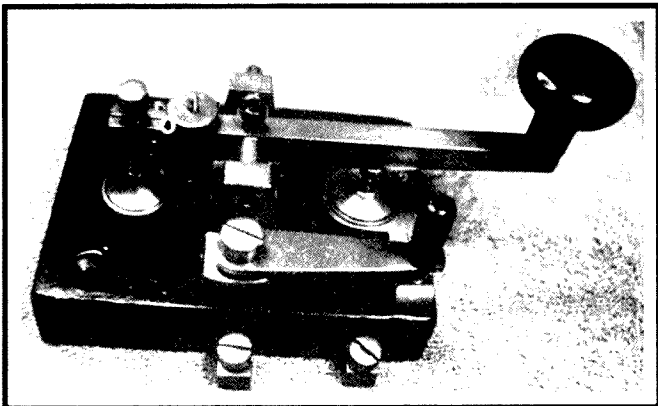
Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

To start off the new year I thought perhaps we might take a nostalgic look at some of the more common types of Australian-made hand keys of the type used by the PMG and amateur operators. However, I must point out these were by no means the only keys that were used as there were numerous makes and models to choose from.

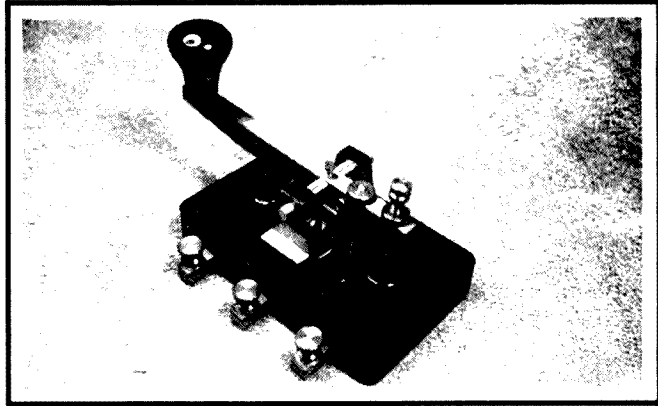
I would like to have submitted a lot more photographs but, as you are aware, we are limited to how much space we are allowed. I hope you and your families had a great Xmas and New Year.



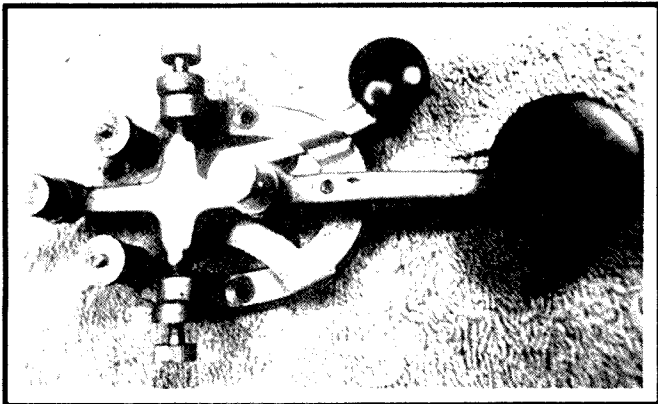
This is the Clipsal Mk1. It is a copy of the standard issue PMG Key.



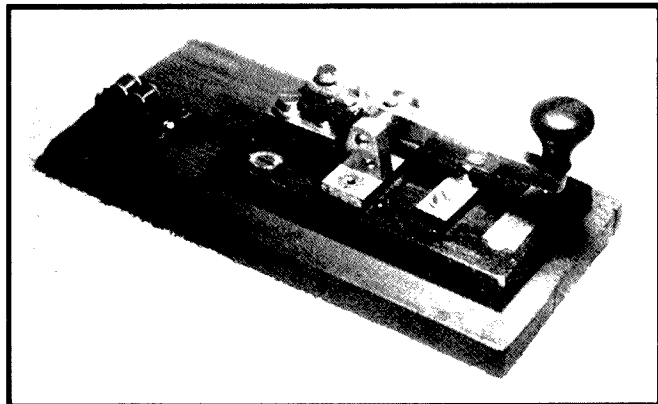
This was the standard issue PMG key with shunting bar.



This is the Clipsal Mk2. As can be seen, this key has three contact points rather than the standard two as normal.



This key was made by Buzza Products Sydney and is a copy of the American Landline Key as used last century.



This key was made by Amalgamated Wireless Australia Limited, No 97/5817, and fitted with a separate buzzer.

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This is the first month of 1998. The sun is shining, the temperature is up in the 30 degrees C range, and there are bush fires and violent storms around. The country is relaxed, the hot air from Canberra has temporarily vanished, and most of those who are part of the taxpaying workforce are on annual holidays.

The serious DXers of our amateur fraternity are still chasing new countries, prefixes, zones, band contacts or modes and islands. Sitting in their armchairs they reflect, between QSOs, about the achievements of the past.

Twelve months ago, Heard Island VK0IR was the big news with 80,673 QSOs, the largest number of contacts ever made by any DXpedition. This was followed by the activity from BS7H Scarborough Reef, S21XX Bangladesh, Yemen 7O1A (which was not accepted for DXCC), ZL9DX Auckland Island, VK0TS Macquarie Island, R1MVI Malayj Vysotskij Island, CY9AA St Paul's Island, VK9WM and VK9WY Willis Island, ZK1XXP North Cook, 5A28 Libya, K7K Kure Island, N4BQW/KH5 Palmyra Island, and 5A7A Libya.

And the immediate future? In February, 9M0C Spratly Islands will be the focus of attention, activated by a large group of multinational amateurs who will spend two full weekends on the islands. Tens of thousands of kilometres away, the World Radio Communications Conference 97 (WRC-97) has just finished. There are no reports yet of what was decided but the 40 metre amateur band revision was very much on the "discussion" table. There is a US proposal to "harmonise" the 40 m amateur band at 6900 to 7200 kHz for amateurs around the globe.

Here at home, propagation and the development of the new solar cycle 23 were the main topics. Twenty metre band DXers were horrified to hear, on 23 November, that the "A" index was 34 and the solar activity was at "major storm level" and the band was practically dead. However, on the same day, Chris VK2NYA and a number of other 10 metre DX enthusiasts had a whale of time. DX from all parts of the globe was pouring in. North and Central America, the Pacific, South East Asia, the Middle East, and Europe saturated the SSB segment of the band. The lesson: check all the bands, several times on each occasion, for propagation.

A happy and healthy New Year to you all!

DXing on 160 Metres

This column is only as good as the material supplied by its contributors. It was with considerable interest that I read Steve VK6VZ's letter which just arrived in time to be incorporated in this column. Here is what

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

he wrote: "There are a small but hardy band in VK that chase DX on 160 m. Perhaps the best known are Mike VK6HD, Bill VK6AS and Hugh VK5BC; but Peter VK3QI, Ron VK3IO, Paul VK3AJJ, Dave VK3EW, Bob VK3ZL, Geoff VK2OI, Alan VK8AV, Peter VK6APZ and myself (VK6VZ) are among the regulars.

"Several of us are now close to achieving the coveted DXCC award for 160 m which, to my knowledge, has only been previously achieved by two Australian amateurs, VK6HD (#1) and Jim VK9NS (#2).

"I currently have 102 or 103 countries worked (all CW), but I am still waiting to receive the necessary cards to claim DXCC. Stations worked from VK in the last month or so include FH/DJ1RL, 5R8EY, ZS6UT, EA6SX, EA6ACC, KH8/N50LS, KH5/N4BQW, KH6/KL2A, ZL7AA, VE1ZZ, the USA from east to west, and many European and Russian stations.

"Working DX on 160 m is the biggest challenge there is for HF-orientated amateurs. I am fortunate enough to live on a half acre property in the semi-rural Perth hills, with space for an inverted U shaped dipole at 45 to 60' high (14-18 m), but there are stations, such as Peter VK3QI, who have worked 90 countries from a suburban block 8 km from the Melbourne CBD on both CW and SSB.

"For those who would like to try their hand at 160 m, a simple 1/4 wave inverted-L, fed against a tuned counterpoise, can get good DX results. If the horizontal section is a bit bent to fit the garden, it really doesn't matter.

"A simple but effective top loaded vertical using a loading coil wound on an up-turned plastic bucket for 160 m was described in Random Radiators earlier this year. Other simple, but effective, antennas include the double sized G5RV and W3EDP types, plus shunt-loaded HF/VHF towers fed as verticals.

"For those who fancy giving 160 m DXing

a go, the CW DX will mostly be found between 1820 and 1840 kHz (the international CW DX window), with SSB DX above 1840 kHz. If conditions are good, the VK sunrise will bring signals from Europe, South East Asia and, for those in the eastern states, occasionally the Caribbean and South America.

"Here in VK6 it is usually easier to work into Europe and Africa than from VK2/3/4/5, but we miss out on the South American and Caribbean openings.

"For those who want to see what can be done on 160 m and have access to the Internet, take a look at Nick VK2ICV's "Who's Who on 160" pages at <http://www.watch4you.com/160/> For example, Bill W4ZV has 290 countries and 39 zones worked and is currently world leader in Nick's 'league table'."

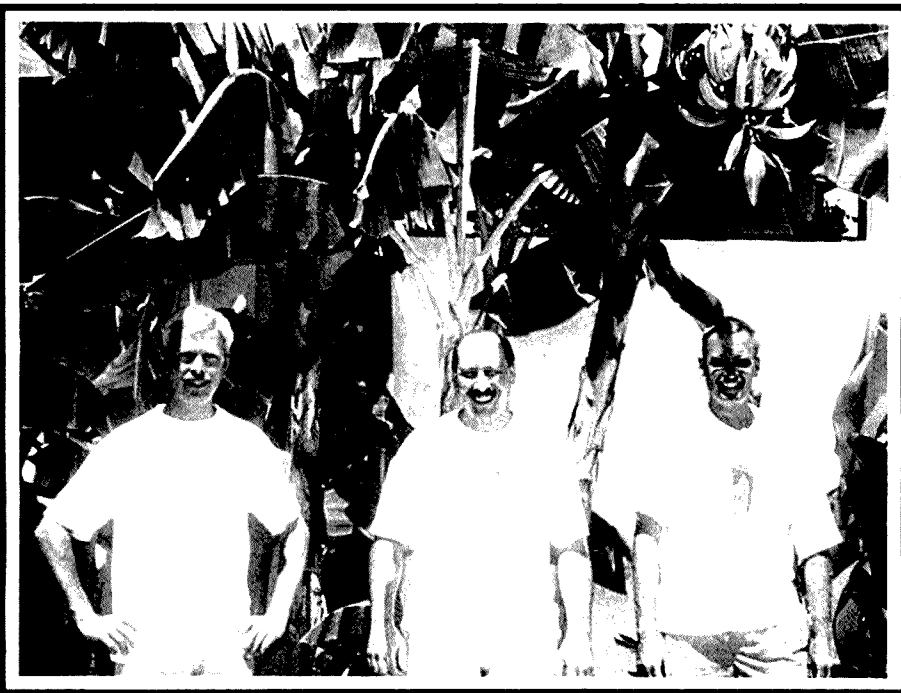
The Amateur Radio Club of Vietnam

On 27 October at 1126 UTC I was listening to a weak CQ call on 14222 kHz. After some difficulty, I had a contact with Bac Ai at the Vietnamese station of 3W6AR. His English was very limited, and his QSO procedure was elementary. Somehow, I got the direct QSL route from him. Later on I had my doubt about the authenticity of the station. Was it genuine? Was it a pirate? Possibly, who knows? As I have Vietnam confirmed, I really did not worry about it any further.

A few weeks later I was sent by VK6NE a colourful printed pamphlet which was distributed at the recent Beijing IARU Conference. This was the pamphlet of the Amateur Radio Club of Vietnam HCMC. Vietnam is not yet a member of the IARU Region 3, but sent some observers to the Beijing conference.

The pamphlet (in English) says that the Amateur Radio Club was founded in 1996 and was officially approved by the Government in 1997. It has three operating stations, 3W6AR at PO Box 732 TTSG, Ho Chi Minh City, Vietnam; 3W6LI at 202 Hoang Van Thu St, Phu Nhuam Dist, HCMC, Vietnam; and 3W6KA at PO Box 76, TTSG, Ho Chi Minh City, Vietnam. Chairman of the Amateur Radio Club of Vietnam is Mr Tran Thang Gong, Vice Chairman is Mr Pham Ba Trinh, and the Executive President is Mr Nguyen Bac Ai, the same gentleman who was my QSO partner on 27 October.

It appears that the Amateur Radio Club of Vietnam is sponsored by the Radio-Electronics Association of HCMC. The abbreviation of HCMC means Ho Chi Minh City.



Peter PA3BBP, Rob PA3ERC and Ronald PA3EWP on Tobago Island 9Y4, IOTA SA-009.

Rottneest Island - VK6ISL

Rottneest Island lies off the mouth of the Swan River, about 32 kilometres west of Perth in Western Australia. It is about 11 kilometres long and five kilometres wide. The island is one of the well known tourist destinations in Western Australia.

There are 250 holiday homes to rent, a youth hostel, museum, camping facilities, bike hires, bus island tours, a local railway to inspect, war relic gun emplacements, tunnels, wildflowers and wildlife.

Malcolm VK6LC who, during the past years, has been in the most inhospitable places in Western Australia and the Northern Territory giving the IOTA chasers a new island to "conquer", decided to have a short holiday from 6 to 12 September on Rottneest Island in civilised surroundings. However, he could not resist putting up his famous ATN 4 el 20 m vertical 4-square array system and have a number of QSOs from IOTA OC-164.

Tobago 9Y and St Lucia J6

Peter PA3BBP, Rob PA3ERC and Ronald PA3EWP have organised a second Caribbean tour, after having successfully visited Guadeloupe FG, Martinique FM, Dominica J7, and Turks and Caicos Island VP5 in 1996.

This year they were on St Lucia J6 from 22 to 30 August and made a total of 1,522 SSB, 5,312 CW and 27 RTTY QSOs. They were on Trinidad from 31 August until 11 September and logged 3,224 SSB contacts, 7,409 CW QSOs and 707 RTTY contacts. In

total there were 18,445 QSOs in the log, 69% CW, 26% SSB, and 5% RTTY. 41% of the contacts were on the low bands (40, 80 and 160 m), 23% on the WARC bands and 36% on the other HF bands.

Finally, we have the VK statistics. In total there were 23 QSOs with 14 different VK stations; on 20 m, 2 CW, 1 SSB and 1 RTTY; on 30 m, 8 CW; and on 40 m, 10 CW and 1 SSB. Only VK2RM was logged on 20 m RTTY.

Future DX Activity

* Harold W0RI and Merv K9FD intend to visit the Beijing Amateur Radio Club BY1QH in December or January. Special attention will be given to 160, 80 and 40 metres.

* Stan SP3BCD will be the new operator of the Polish Antarctic station HF0POL which is located on King George Island (IOTA AN-10, WAZ 13, ITU 73). He will be there for a year starting 1 January 1998 and will operate mostly CW. Send your QSL card to SP3SUN either by the bureau or direct to Piotr Miranski ul, Rysza Smiglego 27/5 65-610 Zielona Gora, Poland.

* Dominique J28DB will be active from Djibouti for the next three years. QSL via F4AAQ.

* Volkmar DF2SS will be active from St Vincent J8 from 20 December to 20 January.

* Bill NH6D has moved from Honolulu to Guam. He will be using the callsign NH2/NH6D. QSL via his manager N6FF.

* Jean-Pierre F5FHI is active from time to

time from Burundi as 9U5DX. QSL via F2VX.

* Kim OX3FV has been quite active on the WARC bands lately from Greenland. QSL via the bureau or direct via Kim Andersen, Box 3, DK-3930 Groennedal, Greenland.

* Amir 4X6TT has been heard from Antigua as V28TT. QSL via home call.

* Gus 9Q5TE is on the bands again from the Democratic Republic of Congo. He prefers CW on 40 m (0440 UTC), SSB on 20 m (2100 UTC) and 12 m (1700 UTC). QSL via SM0BFJ.

* Said A22EW was heard from Botswana on 20 m SSB (1900 UTC), 15 m (1800 UTC) and 10 m (1600 UTC). QSL via KB2MS, formerly KB2UCO.

* Abdullah EP2FM, who is the President of the Iran Amateur Radio Society (Anjoman-e Radiomateuri-e Iran), is active again. He said that he is "the first legal amateur station since his station was closed down in 1983". He was heard on 14200 kHz around 1600-1700 UTC, especially on Fridays (see address of Iranian QSL Bureau in December *Amateur Radio*).

* Cedric FIPSR will be active from Sarajevo, Bosnia until March, possibly as T98PSR. QSL via F5WN.

* Jon 3DA0CA is active on the WARC bands and is now preparing to try the world of 160 metres. QSL via W4DR.

* Mike 5R8EE is putting 500 watts into a 3 element Yagi on 6 m. QSL via FR5EL.

* John C91JM (formerly TL8JM) is active from the USA Embassy on CW/SSB on all bands. QSL via W7MAE.

* Crozet Island will be on the bands again from December to February as FT5WG. Operator is F5BU.

* Pascal TL8PL has been heard on CW from Central Africa. QSL via F5LNA.

* Jack JA8SLU is active again from Mali, until January 1999, as TZ6JA, especially on 40 m. QSL via JA3EMJ.

Interesting QSOs and QSL Information

* N4BQW/KH5 - Chuck - 14245 - SSB - 0657 - Oct. QSL via WA4FFW, Mark McIntyre, 2903 Maple Ave, Burlington NC-27215, USA.

* A45XR/SJ - Paul - 14199 - SSB - 1243 - Oct. QSL via PO Box 981, Muscat, Oman.

* P3A - Cyprus - 14135 - SSB - 0622 - SSB - Oct. QSL via W3HNC, Joseph L Arcue Jr, PO Box 73, Edgemont, PA-19028, USA.

* 3W6AR - Bac Ai - 14222 - SSB - 1126 - Oct. QSL via Bac Ai, PO Box 732 TTSG, Ho Shi Minh City, Vietnam.

* 9X0A - Andy - 14195 SSB - 0446 - Oct. QSL via (new manager) DL5WM, Gottfried Gerth, Obere Dorfstr 13a, D-



VK6ISL OC.164



Mal VK6LC on Rottneast Island as VK6ISL, in front of "Bathurst Lighthouse" with his 20 m 4-Square vertical array.

09661, Gruenlichtenberg, Germany.

* FM5GU - Dennis - 14164 - SSB - 0510 - Oct. QSL via WA4JTK, Alan Strauss, 17401 NW 47th Ave, Carol City, FL-33055, USA.

* T32RT - Ramate - 14164 - SSB - 0507 - Nov. QSL via Ramate Tekeaki, London Village, Christmas Island, Republic of Kiribati, Central Pacific.

* 9M6BG - Brett - 14021 - CW - 1051 Nov. QSL via VS6BG, Brett Graham, PO Box 12727, Hong Kong, China.

* XX9AU - Cheang - 21262 - SSB - 0508 - Nov. QSL via Cheang Vai Ip, PO Box 6018, Macau.

* 9M6CT - Phil - 14170 - SSB - 1050 - Nov. QSL via Phillip J Weaver, PO Box 7, Bangkok 10506 Thailand.

* 8JU0GN - Kako - 21070 - CW - 0606 - Nov. QSL via JARL QSL Bureau.

* Z31VP - Zoran - 14013 - CW - 0700 - Nov. QSL via DJ0LZ, Ace Jevremov, Badstr 8, D-82380, Peisenberg, Germany.

* AP2TJ - Tariq - 21230 - SSB - 1103 - Nov. QSL via W3HNC, Joseph L Arcure Jr, PO Box 73, Edgemont, PA-19028, USA.

From Here There and Everywhere

* Len VK8DK, who used to live at Ali Curung, formerly Warrabi, north of Alice Springs and south of Tennant Creek, has moved further north to Katherine. He is now busy building his own house and a new business. This is the reason why he has not been heard on the bands lately. His address is PO Box 1434, Katherine, NT, 0851.

* Had an interesting chat with Phil, formerly VS6CT, now HS0/G4JMB. Phil retired from his Government post in Hong Kong some years ago and is now settled

permanently in Bangkok. He did, and still does, a lot of travelling. He told me that he now has two locations for amateur activity. One in Bangkok as HS0/G4JMB and one in Kota Kinabalu in Sabah, East Malaysia, as 9M6CT. He will spend Christmas in the UK with family. January will see him in Bangkok and, from February to April, he will be in Sabah. He has the following QSL routes: cards for VS6CT should be sent to JA4ENL. Cards for 9M6CT, XX9CT, VR2CT and HS0/G4JMB should be sent to his Bangkok address, Phil J Weaver, PO Box 7, Bangkok, 10506, Thailand.

* Bill VK4UA is on the air again. He has re-built all his antenna system which was damaged some six months ago.

* Wally R1ANZ has been at the Russian Antarctic Base at Mirny (66 degrees South - 93 degrees East) since July 1996. He goes home mid-March 1998. His QSL Manager is UW1ZC.

* If you had a contact with CE0ZAM, send your card via PO Box 1, Juan Fernandez Island, Chile.

* The CF5 prefix was used by the Saskatchewan Amateur Radio Club to celebrate the 50th Anniversary of the Royal Canadian Army Cadet Corps.

* Do you want to operate a DXpedition from Guatemala (TG)? If so, you have to overcome the red tape of the new Guatemalan Telecommunication Act, which has affected the radio amateur service since January 1997. All Guatemalan and foreign operators licences have to be first certified by the Amateur Radio Club of Guatemala, as representative of the IARU. This certification has to be approved by the Superintendent of Telecommunications and that authority

registers the amateur in the official Telecommunication Registry. The applicant is then issued a certificate, the actual licence, which allows the operation of ham radio equipment on the amateur bands on HF, WARC and 2 metres.

* A6IAJ has a new QSL manager, Bemie McClenny W3UR, 3025 Hobbs Road, Glenwood, Maryland 21738, USA.

* If you worked the special callsign 5J2X from Colombia, your card should go to HK3DDD.

* Some more confusion. The latest up-date on the QSL route for VK0ANARE (Tom VK0TS used the call for one week) and V10ANARE is, contrary to what you may already have heard or read, via Alan VK4AAR.

* Mike, who was active as XU6WV, became a Silent Key in Cambodia. He was noted for his past activities as VR2WV, VS6WV and as SV0FE.

* Ray G3NOM/9M2OM returned to the UK on 2 November. He expects another overseas posting but, in the meantime, send all mail to: Ray Getrard, C/o 37 Godward Road, New Mills, High Peak, SK12 2BU, UK.

* The Guam QSL Bureau is bulging at the seams due to uncollected QSL cards. Most of the cards there are for amateurs who are not residents of the island, visitors long departed without collecting their cards. According to a list produced by the Guam QSL bureau Manager, the holders of the following callsigns are Guam residents, therefore it is in order to send your cards to them via the Bureau system: AH2D, AH2G, AH2S, AH2X, KH2A, KH2G, KH2Q, NH2A, NH2E, WH2S, and WH2U. Most active KG6 calls are not Guam resident stations. KG6ASO is the only known KG6 station active from Guam this time. Always ask the QSL route from the Guam station and send your card to the QSL manager indicated.

* The Japanese group active in Mauritania as 5T5U has left the country. QSL via JA1UT.

* Martin HI3MTU has changed his callsign to HI3Y.

* The recent ZL7AA/ZM7A DXpedition made 12,000 QSOs from Chatham Islands. QSL via ZL2AL, the Bureau or direct.

* The Club station 9A1CRD in Croatia will use the special call 9A2OD to celebrate the 20th anniversary of the Club. QSL via 9A1CRD.

* Jim VK9NS, who was active as VU2JBS until 18 November, has returned to Norfolk Island. He was unable to get permission to operate from Bhutan, Bangladesh, Andaman Islands or the Laccadives.

* Change of QSL manager. Cards for past, present and future contacts with A6IAU go

via W3UR effective immediately. QSLs should not go via K3LP.

* Mirek VK3DXI was active from Christmas Island as VK9XU from 22 to 26 December. He tried to balance a family holiday with ham activity. QSL via DL4DBR. Mirek is an electronic engineer and is based in Bangkok until the end of August 1988. He has his HS0/VK3DXI call already, but the licence issued with it put him into the Novice class (instead of Advanced). As a result, Thai Telecom have kept his HF gear until the class of licence is resolved. He is still waiting on the outcome of his recent application.

Spotlight on SWLing

Robin L Harwood VK7RH

5 Helen Street, Newstead TAS 7250

(03) 6344 2324

e-mail: robroy@tassie.net.au

Propagation

Propagation has been slowly improving on HF and, as this year commences, I do expect that it will pick up as the sunspot numbers rapidly increase. Initial indications are that the peak of this current cycle could be between March and September 2000.

A major "X" class flare erupted from the Sun early in November, causing a spectacularly brief total short-wave fadeout, but as it was on the far surface of the Sun, major disruptions did not eventuate. I am informed that, if the flare had been facing Earth, then considerable disruption would have been caused to HF and satellite communications plus electricity HT lines and undersea cables. These flares are indicative of increasing sunspot activity and, as this improves, so does propagation.

Over-the-Horizon Radar

Recently I have been hearing some Over-the-Horizon radar signals. Whilst listening to the BBC World Service at 0100 UTC on 11955, I could clearly hear pulses underneath. Australia is one of the few remaining nations using this technology but I am uncertain if this was the source. Somehow I doubt that this observation was, as it sounded quite different to the Jindalee

* The Bangkok Amateur radio Club HS0AC, where Mirek HS0/VK3DXI is a member, was active during the recent CQ WW CW Contest. They had special permission to operate on 160 and 80 metres (these bands are normally closed for amateur activity). If you worked them, send your card to LA7JO.

* The QSL Manager for all RW3AH DXpeditions, according to a letter received by Joe VK2CSZ is: Toivo P Laimitainen UA1C/RA3AR, PO Box 228, 188350 Gatchina, Russia.

* Richard 9N1RHM closed down his Kathmandu operation on 16 October.

QSLs Received

RA2FBC (4 m - DK1OJ); VP8CTR (3 m - DL5EBE); HC8N (3 w - AA5BT); TT8KM (1 m - F6FNU); XU2FB (4 m - N4JR); VP9KK (2 m - K1EFI).

Thank You

As always, I am grateful for the assistance given to me by many of you. Special thanks are due to VK2XH, VK2CSZ, VK2EJM, VK2EKY, VK2KFU, VK2TJF, VK3DXI, VK6LC, VK6NE, VK6VZ, PA3EWP and the publications *QRZ DX*, *The DX News Sheet* and the *DX News Magazine*.

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system. This increased OTHR activity seemed to come up just when the crisis was at its peak over the issue of weapons inspectors between Iraq and the United Nations.

Other reports, particularly from the US, said that OTHR was consistently on 7038 kHz at around 1600 UTC. I queried these reports as, from supplied descriptions, it did not sound like OTHR, nor was it consistent with their known operation. However, these signals were also tied up with the Iraqi crisis.

Known anti-Iraqi and anti-Iranian clandestine stations do operate around this frequency and what was heard is "bubble jamming". Iraq and Iran use these jammers over clandestine broadcasts. The stations themselves are low powered but are completely overridden by the deliberate jamming. Incidentally, these clandestine broadcasts also use the main HF rescue frequency in Europe of 5680 kHz and these jammers cause interference there as well.

Listen from 1800 UTC and you may hear these jammers completely overriding the clandestine programming; a cat and mouse game develops as they hop all over the 5.6 MHz aeronautical allocation. These broadcasters are believed to be pro-Kurdish and close to the border of Turkey, Iran and Iraq in the neutral buffer zone.

Voice of Indonesia

The Voice of Indonesia has been rarely heard here in English, but recently I came across it on 11785 kHz from 0800 UTC. Signals are quite good, due mainly to the installation of 250 kW senders at various locations in Indonesia. However, I had some difficulty understanding because their pronunciation was extremely poor. Also, the presentation needed cleaning up as the female announcer kept hesitating, seemingly unsure as to what she was going to say next.

Australian Accent on Croatian Radio

Just after listening to Jakarta, I tuned

around to see what else was about. On 11730 kHz there was a female reading the news and I naturally assumed it was Radio Australia because she had an Australian accent. The signal level was only fair and the items were mainly about Croatia. Imagine my surprise, when the short newscast concluded, to hear that it was indeed the Croatian Radio from Zagreb. Apparently this is a short-wave relay from their domestic service and they have several English language newscasts.

After the English finished, the newscast went into Croatian. I guess I should not have been too surprised over the Australian accented announcer because there are quite a number of Croatians here. Once again the frequency is 11730 kHz at 0900 UTC.

Short-wave on Domestic Networks

I have heard Radio Canada International on short-wave for some time and I was recently surprised to find it being relayed over the ABC Parliamentary and News Network. The program was on at 1230 UTC and it was a repeat of their 1200 UTC broadcast to Asia. When the program ended, the ABC announcer said that PNN also relays Deutsche Welle and Radio Netherlands in addition to the BBC World Service.

Many international stations have dropped short-wave in favour of being able to place their programming over domestic AM or FM networks. However, this has not been working out and the broadcasters are re-evaluating their strategy. Africa was one of their targets for this programme placement scheme, but several countries became nervous and promptly banned local stations from any relays from international stations such as the BBC and the VOA. Satellite delivery to listeners in Africa and SE Asia is also improbable because, economically, it is beyond the reach of the average listener. Also, several administrations have banned

private ownership of satellite dishes, especially in strictly Islamic countries. So it looks as if short-wave will be continuing, at least in the short term.

"Media Network" Changes

The popular "Media Network" may have changed its emphasis following a recent review by the listeners. Some segments may have been scrapped altogether which will not please some regular listeners. However, the Internet has changed the approach of the hobby, alienating older enthusiasts who find

it difficult coming to terms with computer literacy.

"Cumbre DX" over WHRI/KWHR will cater for those who do not have ready Internet access for acquiring updated short-wave news. Times in this region are: 0230-0300 Saturday, 17510 kHz; 1200-1230 Saturday, 11565 kHz; and 0030-0100 Sunday (new), 17510 kHz.

Malta

Malta is broadcasting to Australia from 0200 to 0500 UTC, on Sundays only, via

senders in the Russian Federation, in English and Maltese. They are heard on either 15550 or 17570 kHz. From 0500 to 0530 UTC, Malta has a Japanese language program. The station is known as the Voice of the Mediterranean. Signals are excellent from the 1000 kW sender on 17570 kHz.

Don't forget, if you have any news, please feel free to drop me a line or e-mail me at robroy@tassie.net.au. My thanks to *Media Network* and the *Electronic DX Press* for some information in this month's column.

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AMSAT

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RMB 1627, Milawa VIC 3678
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National co-ordinator

Graham Ratcliff VK5AGR
Packet: VK5AGR@VK5WI
E-mail: vk5agr@amsat.org

AMSAT Australia net:

Control station VK5AGR
Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.

Frequencies (again depending on propagation conditions):

Primary 7.064 MHz (usually during summer).

Secondary 3.685 MHz (usually during winter).

Frequencies +/- QRM.

AMSAT Australia newsletter and software service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia
GPO Box 2141
Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, [ftp.amsat.org](ftp://ftp.amsat.org) and following the sub-directories to "KEPS".

Amateur Radio Satellite Frequency/Mode Update

This summary is taken from the most up-to-date amateur radio satellite status reports that I have available at the time of writing. ANS and other Internet sources.

RS-12

Uplink, 145.91-145.95 MHz CW/SSB, Downlink 29.41-29.45 MHz. Operating normally, currently in mode A.

RS-15

Uplink 145.858-145.898 MHz CW/SSB, Downlink 29.354-29.394 MHz CW/SSB. Operating normally.

RS-16

Uplink = 145.915 - 145.948 MHz, Downlink = 29.415 - 29.448 MHz. Beacons = 29.408, 29.451 MHz, 435.504 MHz and 435.548 MHz

Sputnik Anniversary Model (sometimes referred to as Sputnik-40 or RS-17)

Operating on non-rechargeable battery power. Signals loud and clear at the time of writing (30 November 1997). The beep...beep...beep is meant to emulate the signal from the original Sputnik. Beacon = 145.820 MHz. The satellite was planned to have an operational life of one to two months. The audio tone contains information about the internal temperature of the little Sputnik. A decoding program is available but you need to have made a .WAV file from the audio for the decoder to work.

SAFEX, MIR 70 cm Repeater

Uplink 435.750 MHz FM, Downlink 437.950 MHz FM, sub-audible tone 141.3 Hz. The SAFEX II repeater is working and stations are encouraged to use it. The crew members have the option of talking to amateurs using the repeater. More on MIR later in the column.

AMSAT (AO-10)

Uplink 435.030-435.18 MHz CW/LSB, Downlink 145.975-145.825 MHz CW/USB. Operating normally.

AMSAT (AO-27)

Uplink 145.85 MHz FM, Downlink 436.792

MHz FM. I have no reports of this satellite being turned on in this part of the world. Please let me know if you hear it.

FUJI (FO-20)

Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB. Operating normally. FO-20 is in mode JA continuously.

FUJI (FO-29)

Voice/CW Mode JA:

Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB.

Digital Mode JD:

Uplink 145.85, 145.87, 145.910 MHz FM, Downlink 435.910 MHz FM 9600 baud BPSK. Operating normally.

KITSAT-1 (KO-23)

Uplink 145.85, 145.9 MHz FM, Downlink 435.175 MHz FM, 9600 Baud FSK. This satellite is once again suffering from excessive deviation on the downlink. This comes about when the satellite orbits in full sunlight as it does from time to time.

KITSAT-2 (KO-25)

Uplink 145.980 MHz FM, Downlink 436.5 MHz FM, 9600 Baud FSK. The satellite is operating normally and carrying more traffic than usual due to the problems with KO-23.

UOSAT (UO-11)

Downlink 145.825 MHz. FM, 1200 Baud PSK. Beacon 2401.500 MHz. Operating normally.

PACSAT (AO-16)

Uplink 145.9, 145.92, 145.94, 145.86 MHz FM, 1200 bps Manchester FSK. Downlink 437.0513 MHz SSB, 1200 bps Raised-Cosine-BPSK 1200 Baud PSK. Beacon = 2401.1428 MHz. Operating normally.

DOVE (DO-17)

Downlink 145.825 MHz FM, 1200 Baud AFSK. Beacon 2401.220 MHz. DOVE transmits on 145.825 MHz and 2401.220 MHz. It is presently sending 1200 baud AX.25 (standard packet) ASCII telemetry about every minute on two metres. On S band it transmits PSK flags continuously and also the same data as is sent on two metres. The S

band beacons on DOVE and UO-11 afford an excellent opportunity to test your S mode equipment in preparation for Phase 3D.

WEBERSAT (WO-18)

Downlink 437.104 MHz SSB, 1200 Baud PSK AX.25. Operating normally.

LUSAT (LU-19)

Uplink 1200 bps Manchester FSK Uplinks: 145.84, 145.86, 145.88, 145.9 MHz FM, Downlink 437.125 MHz SSB, 1200 bps RC-BPSK. Operating normally.

UOSAT (UO-22)

Uplink: 145.900 or 145.975 MHz FM. Downlink 435.120 MHz FM, 9600 Baud FSK. Operating normally.

ITAMSAT (IO-26)

Uplink 145.875, 145.900, 145.925, 145.95 MHz FM, Downlink 435.822 MHz SSB, 1200 Baud PSK. This satellite was operating normally at last report.

Appeal for Help in Locating References

I received some correspondence recently from Chris Hill VK6KCH who is engaged in a research project into microsat antenna system requirements. He is particularly interested in producing a definitive study of the design requirements of "all-sky" (ie non-steerable) antennas. Chris is anxious to hear of any previous work done in this area. I have given him copies of a number of articles that have appeared in the AMSAT Journal over the years. If anyone else is aware of any work, no matter how old, in this area, Chris would be very happy to hear from you. His work could result in extending our knowledge of this area of amateur radio satellite work. Thank you.

New Version of SatSpy Program

I am currently "fine tuning" the latest version of this program. It contains a number of improvements and extra features and is well worth a look. Dave Capellucci has a new web site at <http://www.satspy.com> and a demo copy can be downloaded from there along with all sorts of kep element sets including, of course, visible satellites.

ASUSAT

This one should be worth waiting for. Jim White WD0E and others from AMSAT have been working quite closely with Shea Ferring, overall Program Manager, and a team of students at Arizona State University, on a new student-built satellite called ASUSAT. During his recent meetings with the student team, Jim reported that all major hardware components for the satellite are now built and working, and that the space frame is now complete. The focus of the

project at present is on integration, software development and launch opportunities.

Once successfully launched, ASUSAT will operate on the amateur radio frequencies in Mode J. It will be capable of 9600 baud digital operation or it can be used as a "bent pipe" voice repeater. The satellite will carry two cameras, a GPS receiver and a group of experimental earth/sun sensors. It will also be fitted with numerous temperature sensors. The satellite uses an all-carbon composite structure shaped into a cylinder 25 cm high and 35 cm in diameter. Stabilisation will be via a student designed and built gravity gradient boom. Antennas will be monopoles for VHF and UHF. Output power on 70 cm will be between 2 W and 4 W depending on final design, orbit, and overall power budget. Currently, a Low Earth Orbit is planned.

Unfortunately, ASUSAT lost its launch slot recently when the rocket that was to have taken it to orbit had to be modified and ASUSAT's 10 pound mass allocation was used up by changes to the launcher. ASU officials are continuing to look for launch opportunities. Jim reports that funding from industry and ASU is intermittent but continues at a "keep-alive" level. Industry attention toward the project has increased recently as a result of awards won by team members at this year's Small Satellite Conference and other public relations efforts. Jim says that key industry contacts continue to be productive. Those who wish to learn more about the ASUSAT project can do so by visiting their Web site at: <http://www.eas.asu.edu/~nasasg/asusat/asusat.html>

[From AMSAT News Service]

Additional Features for "The Station" Program

Paul Willmont VP9MU, developer of The Station Program, reports that the program now supports in-band automatic Doppler correction for SAREX/MIR Simplex and the MIR SAFEX Repeater. The Station Program is a complete ground-station control program for Windows 3.1, 3.11 and Windows 95. It provides real-time tracking of satellites with automatic radio control.

It was originally designed especially for users of analogue modes (eg voice and Morse). The latest version can always be obtained from the AMSAT-DA web site, <http://www.amsat.bm>, and all proceeds from the registration are donated to the AMSAT Phase 3D Project.

[AMSAT News Service]

These additional features will make "The Station" program ideal for coping with the large Doppler excursions encountered on 70 cm when using (say) the SAFEX experiment on MIR. Most other programs will not handle in-band Doppler correction.

New Experimental Operations Begin on MIR

As part of ongoing frequency experiments to improve amateur radio operations on board MIR, and to better understand how these frequencies will be effective on the International Space Station, MIR will begin a two phase frequency experiment beginning 1 December 1997 and ending on 31 May 1997. For phase 1, a 70 cm/2 m cross-link experiment will operate for a three month period from 1 December 1997 up to 1 March 1998. On 1 December the MIR operating frequencies changed to: Uplink: 437.850 MHz, Downlink: 145.800 MHz.

Phase 2 of this experiment will use a two metre-only set of uplink and downlink frequencies. This phase of the experiment will begin on 1 March 1998 and will also be of three months duration. This experiment was developed by the international partners in Manned Space discussions at the recent Toronto AMSAT-NA Space Symposium. It has been endorsed by the representatives present at the conference which included SAFEX, SAREX, AMSAT-UK, the IARU Region 2 President, the IARU Satellite Adviser, (ZS5AKV), ARI (Italy) and RAC (Canada).

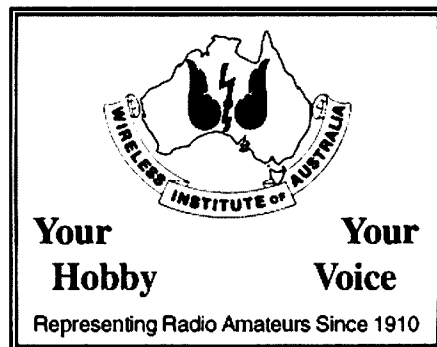
While not present at the Toronto meeting, the US Mirex team has also been consulted and have agreed with the spirit of this experiment. All hope that this experiment will help further understand how best to accommodate future operations of Amateur Radio on Manned Space Vehicles.

[AMSAT News Service]

Oops...Sorry, Puts MIR PMS Operation Off the Air

The MIR crew believes the antenna coax for the MIR PMS station may have been damaged during the space walk on Thursday, 6 November. It has been suggested to the crew not to use the PMS station until the cable is repaired. The crew may attempt to fix the coax cable during a scheduled December space walk. The PMS station should be operational again by the time you read this column.

ar



Five Metres

It's amazing how far *Amateur Radio* travels. A letter has been received from Bert Howes ZS6RO enclosing copies of information relating to five metre operations in South Africa during the 1930s. This was in response to my request for such news in the September issue. I will bring you some of Bert's information as soon as practicable.

Herb Stevens VK3JO has also responded with five metre information, and this will be used in due course.

The following came from Reg Galle VK5QR: "Bob VK5RT reports that in 1933 he used to work Don VK5RD across town on five metres. Apparently very little activity back then.

"The first VK6 contact on six metres was also made by Bob VK5RT, who worked VK6HM at 0105 UTC on 3-10-48. I will remember the occasion because I heard VK6HM call and was all set to reply, when my mains supply went off. Apparently the storm raging at the time caused the failure.

"A number of us, including VKs 5GB, 5LJ, 5CU, 5MK and 5QR, worked him later. This meant that a number of us thought we had worked all states as the Northern Territory is not a State. It was deemed necessary by the WIA that the Territory had to be included in WAS on six!

"At the end of 1949, Jack Coulter VK5JD, who worked for Civil Aviation, was sent to Alice Springs on relieving duties for a couple of weeks. The local six metre enthusiasts talked Jack into packing his six metre gear and a Bill Tilden four element beam suitably broken down into portable form, on to the plane for Alice Springs. He was set up and ready early in January 1950.

"On 10-1-50 VK5JD/p was worked by the Adelaide group, who allowed VK5RT to have the first QSO because he had made the first VK6 contact. The last VK5 to make the contact was Les VK5LC who was the only one to claim WAS.

"The rest of us decided we had already Worked-all-States and never did claim the certificate.

"They were the days Eric. We were very keen with all those records to be broken. On the lower frequencies like 80 and 40 during the early thirties I will always remember the days I worked WAC off two 45 volt dry batteries and a couple of watts to a crystal oscillator plus amplifier. But that's a different story."

Yes Reg, they were certainly good days. I wonder if today the same gentlemanly approach would be given to the first contact to a new area as your group did in 1950. With regret, I would have to say that I doubt it.

VHF/UHF A Expanding World

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First F2 QSO for Cycle 23

The first confirmed six metre F2 contact for Cycle 23 occurred on 14/10/97 at 0101 when Peter PY5CC/PY0FM worked Kenji JR6HI in Okinawa. Signals were 5x9. Peter said it was a surprise contact because there were no other JA or Pacific stations to be heard.

TEP News

If you ever needed to be told that six metres is rapidly improving, then the following is a detailed description of events during most of November. The last few days are missing due to my cut-off date for January news being a week earlier to allow for Christmas.

You have been given a good run-down of what has occurred during September, October and November. I cannot promise such detailed information in the future; it takes many hours to collect, sort, check and enter the line by line activities. Hopefully, it will alert operators that six metres is really moving along now. It seems highly likely that we will see increasing numbers of F2 contacts, commencing with 1998.

Thanks to the JA Cluster, VK3OT, GJ4ICD, W3EP, V73AT, VK2BA and my own on-air observations.


31/10: 2332 PY5CC 50.110 WP4O
1/11: 0006 PY2DP 50.110 FG5BG
1/11: 1455 ZS6AXT to 9H5EE, IT9RZR
1/11: 1502 ZS6PJS to IT9RZR, IK0V AQ
1/11: 1708 V51 VHF/b 50.018 G6YIN
1/11: 1925 9HI CG 50.110 7Q7RM
1/11: 1933 V51 VHF/b 50.018 9HICG
1/11: 2041 ZD8VHF/b 50.033 4Z5JA
1/11: 2317 PY5CC 50.110 FG5BG
1/11: 2322 PY5CC 50.110 WP4MSL
2/11: 0000-0300 ZP6CW hearing YV4,J32,TI4, TI5,HP3
2/11: 0032 PY2XB 50.105 TI4JHQ
2/11: 1542 GJ4ICD 50.110 ZS6XJ
2/11: 2152 PY2XB 50.130 9G1YR
2/11: 2227 ZD8VHF/b 50.033 EH7KW
2/11: 2249 PY2XB 50.110 FM5BG
2/11: 2343 PY2NQ 50.120 PS8DX
2/11: 2351 PY2XB 50.118 KP3AA
2/11: 2354 PY2XB 50.110 FG5BG
3/11: 0014 PY5CC 50.110 KP4UK

3/11: 2054 ZD8VHF/b 50.033 EH7KW
3/11: 2356 PY2PA 50.110 TI4JHQ
4/11: 0133 HC2FG 50.110 LU7EMK
4/11: 2239 KH6HI/b 50.065 V73AT
5/11: 0534 VK6ACY 50.150 JA6SBW
5/11: 0630 UA0/BY-TV 49.750 +/- VK3SIX
5/11: 0808 VK6HK 50.110 JA6SBW
5/11: 0815 VK6ACY 50.110 JA6SBW
5/11: 0822 VK6KZ 50.110 JA6SBW
7/11: 0315 VK3OT hrd VK8VF/b 50.057 559
7/11: 0330 VK3OT hrd VK8RAS/b 50.047 599
7/11: 0331 VK3OT hrd UA/BY CB 39.300, also 49.750 +/-
7/11: 0347 VK3OT JA7ZMA/b, VK8VF/b, VK8RAS/b
7/11: 0400-0530 VK8RAS/b VK3SIX
7/11: 0400 VK3OT 50.120 VK8GF 5x9
7/11: 0500 VK3OT Malay TV 48.2602 by scatter
7/11: 0505 VK3SIX 50.112 JR2HCB
7/11: 0512 VK4BRG 50.110 V73AT 5x9
7/11: 0523 VK3SIX 50.112 JR2HCB
7/11: 0524 VK3SIX open to Asia 42 to 50 MHz
7/11: 0530 VK3OT 50.120 VK3AMK 55A b/s
7/11: 0550 VK3OT carrier link 43.850 5x9
7/11: 0604 VK4BRG 50.110 V73AT
7/11: 0604 VK3OT 50.112 JR2HCB 559
7/11: 0620 Wagga TV 46.240 59A
7/11: 0625 VK3OT hrd VK7RAE/b 50.056, VK7RST/b 52.370 57A
7/11: 0630 VK3OT and VK5LP: 49.750 +/- offsets 5x9
7/11: 0640 VK3OT - CB radios from 28 to 44 MHz
7/11: 0650 Chinese cordless phones 48.250 5x9
7/11: 0700 VK3OT and VK5LP: Carriers on 45.240, 42.570, 42.260, video on 49.7481, 49.7497, 49.7500, 49.7505, 49.7506, 49.7507 etc.
7/11: 0705 VK3OT hrd VK8RAS/b 559 - video goes down, VK8RAS/b goes up and vice versa
7/11: 0800 sun sets - all signals gone
Comment from Emil W3EP: 7/11: "The cycle seems to be picking up fast now, with the flux above 100 for a few days. Ten meters has been open nearly every day (not always to Europe though—mostly N-S paths), with the MUF above 40 MHz most days, as you have noted as well. Certainly by this time next year we will have our hands full keeping track of all the 6-meter DX!"
8/11: 0535 V73AT hrd VK4RGG/b 50.058
10/11: 0515 ZL3TY hrd VK video 46.240 S9, sound 51.740 S4
10/11: 0700 VK1RX video and sound 45 to 55 MHz
10/11: 0703 ZL3TY hrd VK2RSY/b 599
10/11: 0704 ZL3TY to VK3DUQ, very weak
10/11: 0745 VK1RX hrd ZL3SIX/b, worked ZL3TY 0750 5x9
10/11: 0800 VK3OT 50.140 ZL3TY 5x5
10/11: 0805-0842 ZL3TY hrd VK7RAE/b 579, worked VK3DUT, VK3OT, VK7GUN, VK2BHO, VK3DEM
10/11: 0840 VK3DUQ 50.140 ZL3NW 5x9
10/11: 0900 VK3OT ZL3SIX/b, video 45 to 55 MHz
11/11: 0730 VK3SIX hrd ZL3SIX/b to 599
11/11: 0732 VK3SIX 50.130 ZL2KT 5x9
11/11: 0735 VK3SIX hrd VK4ABP/b 559
11/11: 0735 VK3SIX 51.028 ZL2MHB/b 559
11/11: 0800 VK3SIX video 45 to 55 MHz
12/11: 0245 JA IRJU 50.760 ZL-sound 5x9, video 45.240/250/260
12/11: 0530 VK3SIX 50.057 VK4RGG/b, VK2 and VK4 TV

12/11: 1130 VK3SIX 52.345 VK4APB/b, VK4DO
 12/11: 1133 VK3SIX 50.047 VK8RAS/b, VK5AYD
 13/11: 0515 V73AT 50.010 JA2IGY/b
 15/11: 0000 ZL4TBN to VK4BRG
 15/11: 0030-0118 ZL3TY to VK4DO, VK4AFL, VK2ERF
 15/11: 0200 ZL3TIC 46.170 video 5x9
 15/11: 0500 VK8SEA 55.250 Asian TV offsets
 15/11: 0515 VK8SEA 49.750 video UA0
 15/11: 0600-0734 VK8SEA JA1,2,3,4,5,7,9 - 16 stations
 15/11: 0616 VK8RH 50.110 JA1RJU
 15/11: 0627 VK3SIX/8 50.140 JA3EGE
 15/11: 0630 JA3EGE, JASCMO hrd VK3SIX/b
 15/11: 0630 VK3SIX/8 50.120 JA3EGE, JASCMO
 15/11: 0815-0847 ZL3TIC video 46.170, 46.240, 57.250, 5x9
 15/11: 0905 ZL3TIC 50.130 VK7GUN
 15/11: 0910 ZL3TIC VK7RAE/b 5x9
 15/11: 0915 ZL3TIC video 48.250 strong
 16/11: 0554-0637 JA1RJU to VK2IBT, VK2ZDX, VK4JSR, VK4AFL, VK4APG
 16/11: 2100 ZL3TIC reports VKs all day, VK1,2,3,4,8
 16/11: 2115 ZL3TIC to VK2DN 5x9
 16/11: 2215 ZL3TIC to VK4DO, VK4JH, 5x9
 16/11: 2200 VK1RX 55.250 ZL TV
 16/11: 2300 ZL3TIC 69.740, 86.250, 5x9
 16/11: 2315 VK2BA hrd VK7RAE/b 5x9, VK4BRG/b 5x7
 16/11: 2342 VK2EMA 50.160 VK4JH
 17/11: 0220-0300 V73AT video 46.240, 46.260, 46.120, 45.260
 17/11: 0429-0630 JA1RJU to VK2HO, VK4LR, VK2BA, VK4CWJ, ZL3NW, VK4WTN, VK4BIT, VK4AFL, VK2VC, VK2FLI, VK2BTS, VK2ZDX, VK2IBT, VK4JSR, VK4BRG, VK4RGG/b, 5x7-9
 17/11: 0436 JA3EGE 50.120 VK2HO 5x9, VK4CWJ, VK4LR, VK4RGG/b
 17/11: 0501-0518 ZL3NW 50.110 JA1RJU, JR2HCB, JH1WHS
 17/11: 0510 ZL3TIC 50.110 JA1RJU, JH1WHS
 18/11: 0000 YJ8UU 50.120 VK2YO, VK4BRG, VK4KK, VK4CV, VK4DMI, VK4WTN
 18/11: 0332 JF1NUV 50.0535 VK3SIX/b 579
 18/11: 0336 JA1RJU 50.110 VK5BC 579
 18/11: 0350 JH0HME 50.056 VK7RAE/b 599
 18/11: 0357 JA1RJU 50.130 VK3XQ 599
 18/11: 0405 ZL2AG1 hrd JA3 weak CW 50.110, first for cycle
 18/11: 0410 JA1RJU 50.140 VK3AMK 5x9
 18/11: 0425 JL4GTO 50.110 VK5RO 419/529
 18/11: 0435 JA1RJU 50.110 VK5RO 579
 18/11: 0441 JJ3AZA/I 50.116 VK5BC
 18/11: 0445 JA1RJU 50.056 VK7RAE/b 599
 18/11: 0530 JA1RJU 50.0535 VK3SIX/b 559
 18/11: 0530-0543 VK3SIX/3 50.120 to JR2HCB, JE2DWZ, JA1WLO, JG2AJK, JJ3AZA/I, JH7LLE, JF1NUV, JH0RNN
 18/11: 0545 JRO9EE/b 50.032 559
 18/11: 0546 JA7ZMA/b 50.027 559/579
 18/11: 0546 JH0ZND/b 50.490 579
 18/11: 0555 JA1LYK Keyer? 50.022 579
 18/11: 0600 JA2IGY/b 50.010 559
 18/11: 0603 VK3SIX/3 50.105 JF1NUV 559
 18/11: 0608 VK3SIX/3 50.130 JA1RJU 5x9
 18/11: 0621 UA/BY TV 49.750 +/- 5x9
 19/11: 0437-0511 JA to VK2, VK4
 20/11: 0700 VK3OT ZL TV 45.250
 21/11: 0115 VK4BRG/b 50.077 Es.
 21/11: 0200-0300 VK4JH 50.104 VK2BHO SSB
 21/11: 0230-0300 VK5BC 50.110 VK4s
 21/11: 0230 VK4ABP/b 52.345 Es
 21/11: 0240 VK7RAE/b 50.0565 b/s

21/11: 0300 VK8RAS/b 50.047 Es
 21/11: 0348-0525 JA1RJU to VK5PO, VK5NC, VK5RO, VK5ZBK, VK3BXA, VK3CNX, VK3ANP, VK3OT, VK3AKK, VK7JG, VK7GUN, VK2ERF, VK2BHO
 21/11: 0400 49.750 +/- UA0 TV from 360 degrees TEP
 21/11: 0400-0530 JA1,2,3,4,7,9 worked VK2,3,4,5,7
 21/11: 0405 50.010 JA2IGY/b TEP 559
 21/11: 0407 50.016 JA6YBR/b TEP 539
 21/11: 0410-0530 JL4GTO, JA1RJU to VK3XQ, VK3AKK, VK3SIX, VK3AMK, VK3CNX, VK3ANP, VK3BXA, VK3OT, VK2BHO, VK2ERF, VK2APG, VK7GUN, VK7JG, VK5RO, VK5NC, VK5ZBK, VK5PO,
 21/11: 0415 50.023 JA1ZYK/b TEP 559 Chiba QM05br
 21/11: 0415 50.027 JA7ZMA/b TEP 579 QM07
 21/11: 0415 50.032 JRO9EE/b TEP 559 PM97
 21/11: 0415 50.047 VK8RAS/b E scatter 339 PG66
 21/11: 0416 50.490 JG1ZGW/b 539 TEP
 21/11: 0415 50.485 JH9YHP/b 539 TEP PM64 Toyama
 21/11: 0423-0459 JA9BHZ to VK3AYZ, VK7GUN, VK5ZBK, VK7JG, VK2ERF, VK3SIX, VK5RO, VK3ANP, VK3XQ,
 21/11: 0425 VK3OT to JE3TJS/m 5x5, band full of JAs
 21/11: 0430 50.195 slow scan TV signal 599+
 21/11: 0415 on - JA1RJU, JE3TJS, JA1AUD, JEONWC (Harry JH0HQ), JA9BHZ, JH7LLE (500w), JE1RXJ, JE2TPM, JA4TOH (rare Yamaguchi), J13CWB, JN1MKU worked VK2, VK3, VK5 and VK7GUN
 21/11: 0500-0830 VK3OT hrd VK4BRG/b 50.078, VK4ABP/b 52.345
 21/11: 0530 V73AT reported 46.260 TV Tamworth on 28.885
 22/11: 0001 ZL2WNB 50.129 JA3EGE
 22/11: 0350 ZL3TIC 50.110 JA3JTG 5/9
 22/11: 0350 ZL3TIC reports American Samoa TV on 55.250/59.750
 22/11: 0351-0410 ZL3TIC 50.140 JG3IFX, JN3NFQ, JA3QJA, JA3AQR, JH3APA, JA3GR, JG3GNU, JA3JTG
 22/11: 0356 ZL3NW 50.130 JH3OWO
 22/11: 0400-0412 ZL3TY 50.150 to JA2,3, 11 contacts
 22/11: 0403&0420 ZL3TIC 50.130 3D2CM 5/9+
 22/11: 0455 ZL3TY to JA2.5, 5 contacts
 22/11: 1900 ZL3TIC hrd VK TV on 46.240 and 46.170 5x9+
 22/11: 2010 ZL3TIC - strong signals from VK1,2,3,7
 22/11: 2045 V73AT hrd video 45.250, 45.260, 46.172 strong
 22/11: 2048-2232 ZL4TBN to YJ8UU, VK3OT, VK3CAT, VK3DUQ, VK4AFL, VK4KK, VK4JSR, VK4BKM, VK4YPM, VK2YDC, VK2AFH, VK2AJ
 22/11: 2100 VK3OT hrd ZL3SIX/b 50.040, all 45 MHz TV offsets 599
 22/11: 2110 YJ8UU 50.110 ZL3TIC 5x9, also ZL3AUU, QSL ZL2HE
 22/11: 2110 ZL3TIC reported strong signals from VK1,2,3,4,5,7
 22/11: 2115 ZL4TBN 50.145 YJ8UU
 22/11: 2130 ZL2MHB/b 51.028 and Nicam sound 599
 22/11: 2130 ZL3TIC - 57.240, 57.250, 57.260 5x9, Am. Samoa 5x9, 69.750, 86.250, 91.750, 100.300, 100.500, 105.200 broadcast FM from VK all 5x9
 22/11: 2140 VK3OT to ZL3NW, ZL3TY, ZL3TIC

22/11: 2140 YJ8UU 50.110 VK3OT 5x3, Stewart, Port Vila, also to VK4JSR, VK2BA, VK3DUT, VK7GUN
 22/11: 2200 VK3s to FK8FB 5x5 Noumea
 22/11: 2230 VK3OT hrd VK4BRG/b 599, 55.250 TV 599, MUF above 80 MHz
 22/11: 2300 YJ8UU 50.140 VK3SIX 5x9, also VK3,4,5,7
 22/11: 2336 V73AT video 49.750/46.250/46.260/46.172
 22/11: 2345 V73AT 50.110 KH6HKL 5x5, KH6HME 559, KH6HI 579
 22/11: 2348 JA3EGE 50.147 ZL3TPY 50.147
 22/11: 2354 V73AT 50.110 V73A 5x9 Marshall Island 9
 22/11: 2359 ZL2TPY 50.147 JROQFA
 There was a report that G4XPL had heard VK6RPH/b twice during November around 1730! I have tried, but am unable to obtain additional information. Last cycle the latest propagation from Perth to UK was at 1400.
 23/11: 0000 JROQFA 50.147 to ZL2TPY
 23/11: 0000 PY5CC 50.110 7J6CCU
 23/11: 0000 YJ8UU to VK1,2,3,4,5,7
 23/11: 0001 JA3EGE 50.129 ZL2WNB
 23/11: 0002 JA1RJU 50.147 ZL2TPY 5x9
 23/11: 0002 V73AT 50.110 KH6VP 5x5
 23/11: 0007 JA1RJU 50.147 ZL3NW 5x9
 23/11: 0009 VK3OT 50.155 JA1VOK 5x9
 23/11: 0010 ZL2KT 50.125 JA1RJU 5x7
 23/11: 0010 VK3OT 50.155 JG1TGN 5x9
 23/11: 0010 VK3OT 50.155 JA0GLM 5x9
 23/11: 0010 ZL3TIC to JA1,2,3, 55.2550, 59.750, 5x9 AU b/s




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23/11: 0011 VK3OT 50.155 JRILZK 5x7
 23/11: 0011 VK3OT 50.105 JH0HZO 559
 23/11: 0030 VK3OT hrd VK4BRG/b until 0400
 23/11: 0056 VK3OT hrd VK8RAS/b 559
 23/11: 0115-0119 V73AT 50.110 JA1 - 7 contacts
 23/11: 0136-0209 V73AT to VK4APG, VK4JSR, VK4YPM, VK3ALM, VK3ATQ, VK3YY, VK3HI, VK3OT, VK3AMK, VK3ZNF, VK3JWZ, VK3SIX, VK2TP, VK2APG, VK2ZDX, VK2QF, VK1VP, VK5NC
 23/11: 0212 V73AT 50.110 CW until 0400
 23/11: 0234 VK3OT 50.110 V73A 5x9
 23/11: 0251 VK3OT hrd VK4APB/b 52.345 559
 23/11: 0330 RI TV PN Vladivostok, hrd by VK3OT, VK2QF, VK1RX, VK5LP
 23/11: 0415 VK5NC to V73AT
 23/11: 0420 VK5AYD CQ call from Coober Pedy, SA
 23/11: 0430 ZL3TIC hrd 46.170, 45.240, 45.250, 55.240, 55.250, 55.260
 23/11: 0758 VK3OT 50.110 V73AT
 23/11: 0900 VK3OT 50.047 VK8RAS/b, VK4ABP/b, VK4BRG/b
 23/11: 1900 ZL3TIC 46.240, 46.170 VK video strong
 23/11: 2110 YJ8UU 50.110 ZL3TIC 5x9, ZL3AAU
 23/11: 2145 VK3OT 50.110 JY8UU 5x9
 23/11: 2152 V73AT 45.260, 46.172, video
 23/11: 2343 ZL2TPY 50.110 JA3EGE

On 23/11 three different types of propagation were noted, TEP, Sporadic E and Aurora.

Scott VK4JSR wrote: "A big thank you to the few operators that used 50.150 and 50.200 as calling frequencies during the huge E opening on 23 November.

"The removal of some of the pressure from the DX window, assisted those of us who do wish to work DX, and gave a little bit of space.

"However, the number of stations still using the DX window for local (VK to VK) contacts is a concern. Their operating truly affected the success of a number of DX contacts being made, particularly their insistence on answering a VK calling DX on 50.110!

"Slowly we hope to see 6 m band users educated in the 'correct' use of the band - all it is, is just showing a little consideration, we have a whole 300 kHz to use, with 50.200 - 50.300 left almost empty!

"So, for those who were too involved in talking to other VKs, you missed - V73AT, YJ8UU and FK8FB."

24/11: 0355 Vladivostok video
 24/11: 0355 JA5FFJ 50.110 539
 24/11: 0400-0530 VK3OT worked JA1, 2, 3, 4, 5, 6, 7, 8, 9, 0 - 100 contacts in 90 minutes mainly on CW, 50.130/50.107/50.115. VKs 3AMK/3AKK/3DQJ/3XQ also participated

24/11: 0353 ZL2AGI 50.140 JA1RJU 5x9
 24/11: 0359 ZL2AGI 50.110 JA1RJU
 24/11: 0407 ZL1AKW 51.390 JA1RJU 5x7
 24/11: 0456 VK3OT 50.120 ZL3TIC, ZL3TY by AU
 24/11: 1230 VK3OT 45.250 ZL4-TV, intense AU b/s never heard on ZL video before
 24/11: 1300 VK3OT 50.750 ZL4-TV sound, by AU b/s
 24/11: 1302 VK3OT 46.240 VK2-TVO video, by AU b/s
 24/11: 2123 V73AT 45.250 video

25/11: Special note from Steve VK3OT reports: "Following an intensive afternoon opening 0455-0552 to all JA call areas, at 0617 Western Chinese TV 49.751, 49.7498 etc., 0737 Channel A2 55.2496 with extremely high burr in sound (60 Hz), 0820 55.2394 cf A2 60 Hz raster and 55.2550 spur (equals 15,575 lines) which indicates 55.250 NTSC video. Triangulation by VK5NC QF02 and VK5LP PF94 puts the signal as coming over the South Pole! From where? South America?"

David VK2BA reports that: "Things are living up on Six for the new season. Whenever the band opens I go straight to 50.200 to use the new calling frequency and to encourage others to do the same. A few are starting to use it but there are others who will never shift from 50.110 as far as I can determine. Well, that will be to their disadvantage because they are starting to miss out on a lot of contacts because they are getting ignored by many.

"I had a good JA opening on 17/11 around 0500. Worked 18 JAs in five zones and had them well piled up. Quite exciting. Haven't heard anything like it for many years. There were a few weak JAs in this afternoon (21/11) around 0515 but those that came up on or near 50.110 got well and truly obliterated by a station who called and called over them on CW. I hope that JAs were all that were missed and not something more exotic."

As the Es season progresses, I have observed that an increasing number of stations are shifting off 50.110 and are spreading out up to 50.150 and higher. The new 50.200 calling frequency is being increasingly used for Es contacts, which indicates responsible operating, and leaving 50.110 for the real F2 DX. JAs can also be found on various frequencies although a few seem to like to live on 50.110.

Tim V73AT, now has a TE Systems S/S amplifier which runs 400 watts CW mode.

He will be absent from V73 from 13/12/97 to 5/1/98.

VK3OT will be absent from 27/12/97 to 1/3/98.

Vale Mike XU6WV

OPDX is sad to report that Mike W0YZS, who many have worked as XU6WV, became a Silent Key (SK) on 27/10/97 in Kampuchea, Cambodia. Mike was also noted for his activities as VR2WV, VS6WV, SV0FE, SV0FE/SV5 and SV0FE/SV9. OPDX sends deepest sympathy to the family.

The above reported by Steve VK3OT. Geoff GJ4ICD added that he had worked Mike several times in SV and VS6.

UK/Europe

Ted Collins G4UPS reports that Ron 7Q7RM in Malawi had his first 1997 contacts with G on 2/10. The 7Q7SIX beacon is still operating on 50.003 from KH75. John 7Q7JL also operates on six metres but is extremely busy with work at the moment.

From Ethiopia ET3SIX is now on six metres, also Tony A45ZN has verbal permission to operate from Oman. From January 1988 Dale VQ9QM will be on six metres.

Countries worked/heard for October: 4N1, 7Q7, 9A, 9H, CN8, CT, EH, EH6, EH9, F, G, HB0, IS0, LZ, OH, OK, OZ, PA, SM, SP, TR, V51, YU, total 23.

News from VK6

Wally VK6KZ advises: "Neil Sandford VK6BHT and Wally Howse VK6KZ have had two home to home contacts on 10 GHz SSB and are prepared to claim the 378 km as some sort of 10 GHz record! Not many can operate from home to home over that distance so it may last for some time! On 3/11/97 at 1410 signals were 5x6 both ways with some QSB, but were very good over a half hour period and were operating on the trailing edge of a trough down the west coast."

VK6KZ also worked Rick VK6XLR at Exmouth via the Exmouth repeater on 146.850 MHz. The VK6RBS beacons from 200 km south of his QTH in Perth were at good strength including the one on 1296 MHz. On the same evening Bill VK6AS in Esperance was frustrated with no responses on 144.100 MHz, notwithstanding copying the Adelaide, MI Gambier and Geelong 2 metre beacons! [Phone calls can help! ... VK5LP]

"David Lloyd VK6AOM in Buntine (north of Wubin) and about 230 km at 18 degrees from Perth is being worked regularly on 144 and 432 MHz from Perth and (on CW) by Bill VK6AS in Esperance. Cec Andrews VK6AO has also worked David on 1296 MHz SSB and he has been heard on that band by Alan Woods VK6ZWZ and by Wally Howse

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VK6KZ but no two-way contacts yet. David has steadily improved his antenna system since VK6KZ worked him on 15/10/1997 when David only had a 144/432 MHz vertical!

"New operators on 144 MHz SSB include Don Truscott VK6UT, Tony Green VK6YAG and Don Grimble VK6KAR all in Perth.

"Trevor Niven VK5NC is helping with the 10 GHz Perth beacon antenna by slotting some wave-guide to similar specifications as the VK5VF beacon supplied by David Minchin VK5KK. Neil VK6BHT has completed the transmitter, Don VK6HK the keyer and Wally VK6KZ the power supply. Tests with the beacon into a 20 dB horn have been very successful with Neil hearing the beacon on the 3/11, the first day of the tests.

"Al Edgar VK6ZAY has won the WIA Home Construction Trophy at the Northern Corridor Radio Club Hamfest held on 2/11 with a brilliantly designed and constructed Spectrum Analyser covering to about 7 GHz. It utilises a number of recycled sub-systems of other gear such as the FM828. He beat a number of other contestants including Terry Grammer VK6TRG with self designed transceivers for 3.5 and 5.7 GHz, exploiting the ERA MMICs and a 160 metre handheld."

An EME signal

Rick Kowalewski VK6XLR at Exmouth said in an e-mail that a CW signal was heard on 144.0324 MHz between 1230-1234 on 15/11/97 during the ARRL EME contest. Moon at the time was at 66 degrees az and 12 degrees el from grid OG78bb.

"My Yagi was pointed towards the moon at

the time. I cannot read CW, but I did recognise the station calling CQ. There are no stations within 1000 km of me that use 144 MHz CW, as far as I know. My station consists of an Icom IC-820 and a 11 el Yagi fed via LDF-50A heliax, but no pre-amp."

Mike Farrell VK2FLR replied that: "Rick would have been hearing K5GW. I worked him on 144.032 on Sunday night and he was moving my S meter up to S3 in a 2 kHz passband. Definitely the strongest signal out of North America these days.

"It just goes to show what you can hear off the moon using one Yagi! Others worked were: J1ZCG, SM5BSZ, SM5FRH, W5UN, KB8RQ, SM0FUO, RU1AA and SM5DCX. Operating time was about four hours all up."

So there we are, answers can sometimes be found in these columns!

Closure

Through September, October and November, six metres has been reasonably busy, especially around 49.750, plus many beacons, although operators have not been plentiful. December should see amateur activity increase.

Keep in mind the Ross Hull Contest (which commences after Christmas Day), the VHF/UHF Field Day in January, and the John Moyle Memorial Contest in February.

Closing with two thoughts for the month:

1. Drive carefully. Remember it is not only a car that can be recalled by its Maker, and
2. Inflation is a method of cutting a dollar note in half without damaging the paper!

73 from *The Voice by the Lake*

ar

is recommended that the radial pin be the earth pin. This follows closely the Standard for three pin plugs wherein it also states that the radial pin shall be the earth pin. (A copy of the relevant page of the Standard was included to support the statement. Ed)

Actually, I think that the Standard grew from positive earth systems such as those common on some boats. I have seen an airport installation using such plugs on a positive earth system also, but with a 50 V supply.

Nevertheless, the Standard does exist and I know of many amateurs who abide by the Standard. It would appear that most of Australia abides by the ASA rules and that (again) Victoria wants to go its own way (said with tongue in cheek!).

Bill Sebbens VK4XZ
PO Box 511
Maleny QLD 4552.

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Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

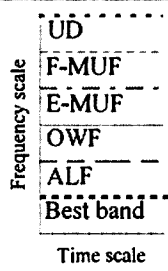
Editor's Comment in November 1997 Amateur Radio - Two Pin Plugs

There is an ASA (Australian Standard) for such plugs and sockets. It states that where the Extra Low Voltage is reference to Earth, it

HF Predictions

Evan Jarman VK3ANI

T Index: 46



These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication.

The frequencies, identified in the legend, are:-

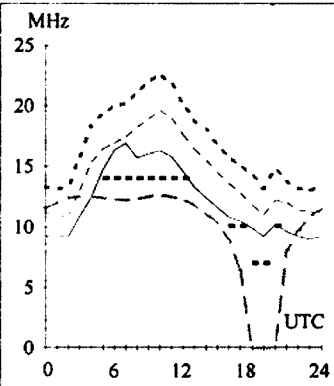
- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

The predictions were made with the Ionospheric Prediction Service program, ASAPS V3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

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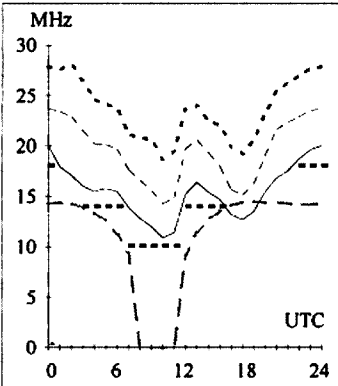
Adelaide-Capetown 226

Second 4F5-12 4E0 Short 10154 km



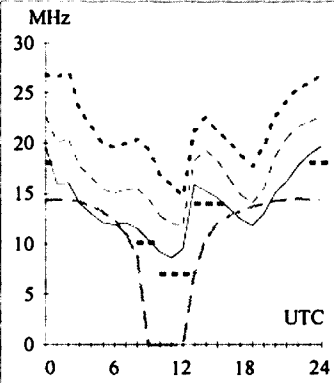
Brisbane-Lima 122

First F 0-5 Short 13056 km



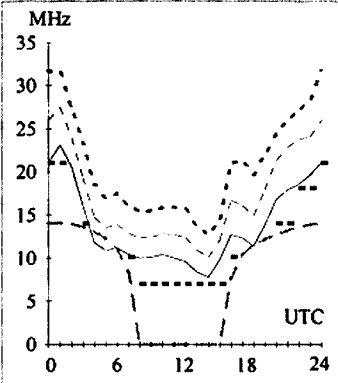
Adelaide-Miami 95

First F 0-5 Short 16175 km



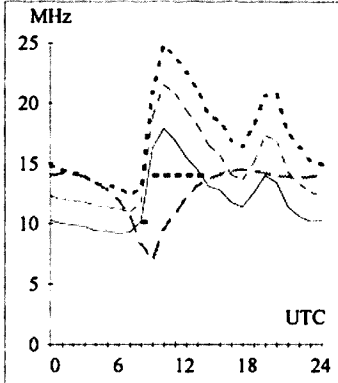
Brisbane-Los Angeles 59

Second 4F3-6 4E0 Short 11563 km



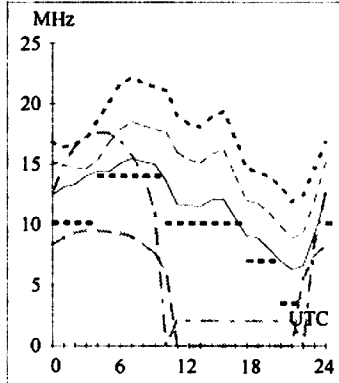
Canberra-London 136

First F 0-5 Long 23042 km



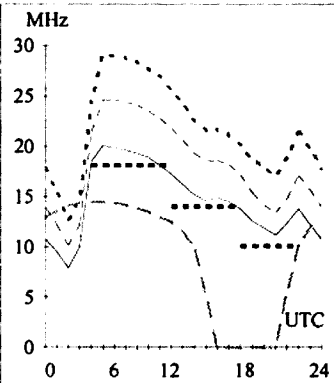
Darwin-Singapore 295

Second 2F12-24 2E2 Short 3351 km



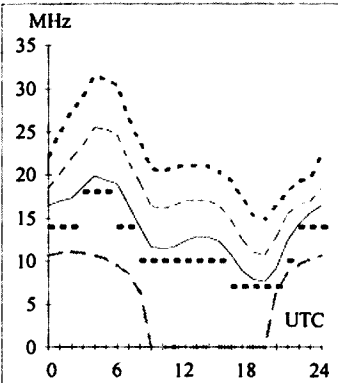
Adelaide-Tel Aviv 291

First F 0-5 Short 13126 km



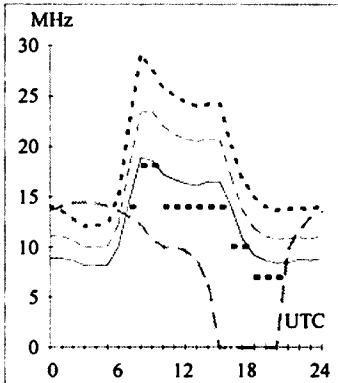
Brisbane-Port Moresby 342

First 1F8-14 1E0 Short 2090 km



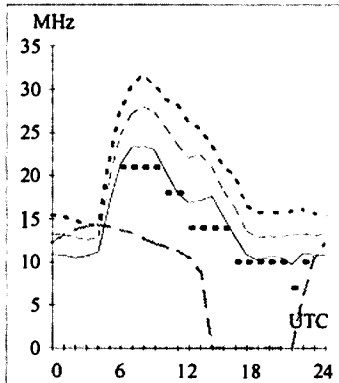
Canberra-London 316

First F 0-5 Short 16982 km



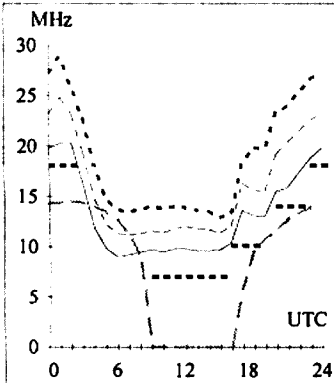
Darwin-Sofia 311

First F 0-5 Short 12371 km



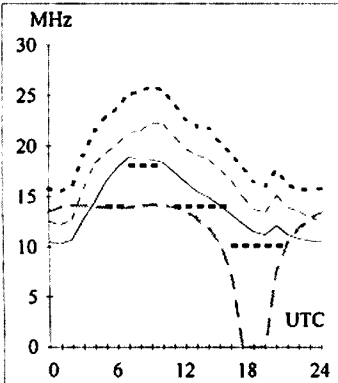
Adelaide-Vancouver 49

First F 0-5 Short 13421 km



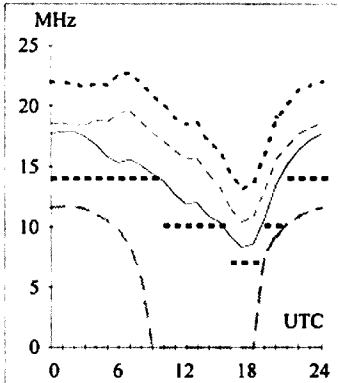
Brisbane-Pretoria 230

Second 4F3-8 4E0 Short 11657 km



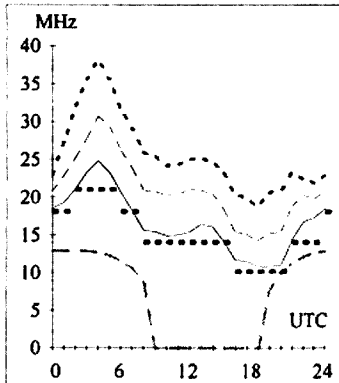
Canberra-Auckland 102

First 1F7-12 1E0 Short 2300 km



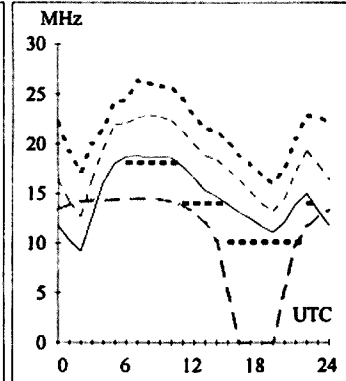
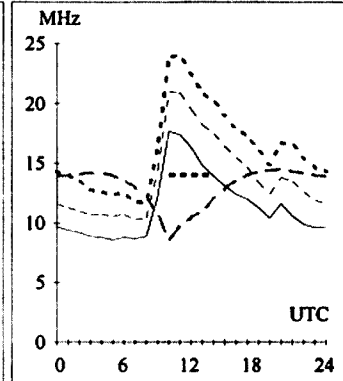
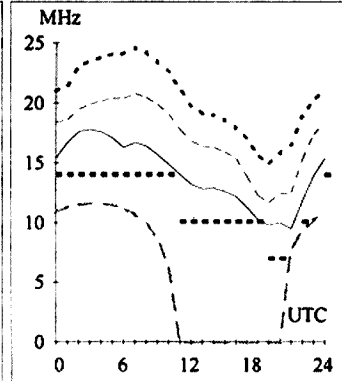
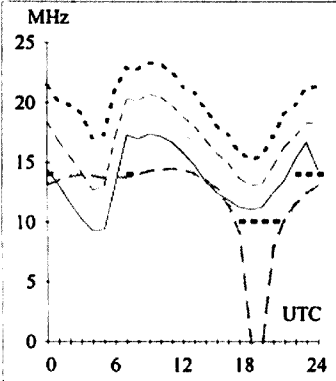
Darwin-Suva 103

First 2F5-10 2E0 Short 5126 km



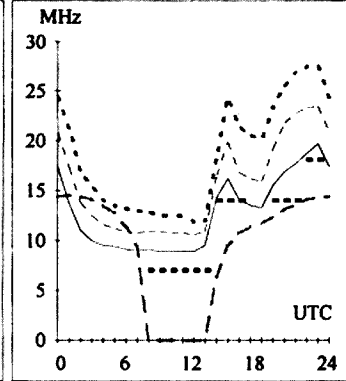
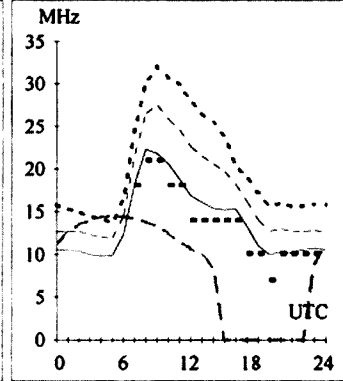
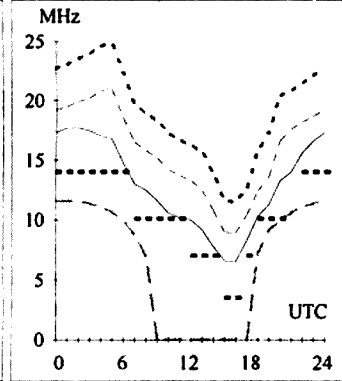
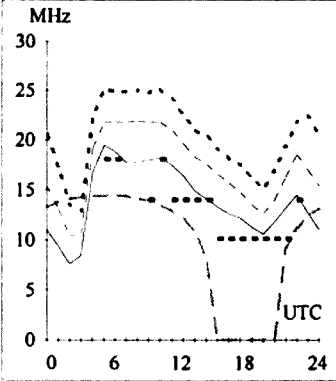
Hobart-Accra 227 **Melbourne-Bali** 310 **Perth-London** 133 **Sydney-Nairobi** 255

First F 0-5 Short 14783 km First 2F7-13 2E0 Short 4434 km First F 0-5 Long 25543 km First F 0-5 Short 12147 km



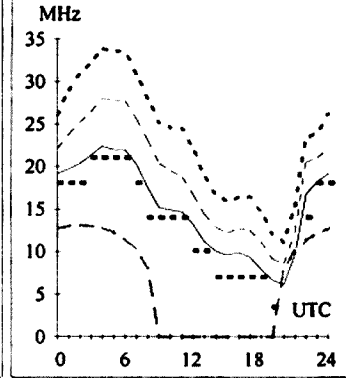
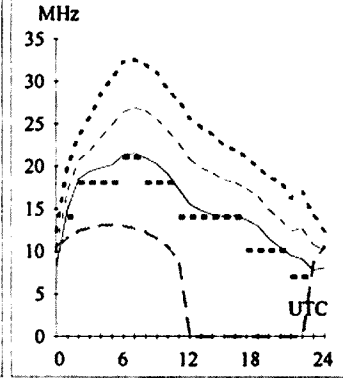
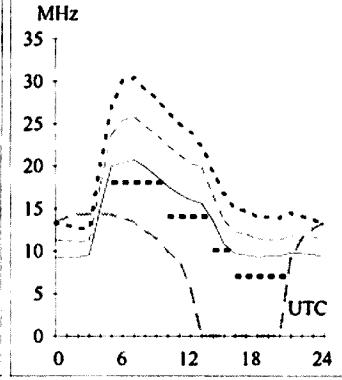
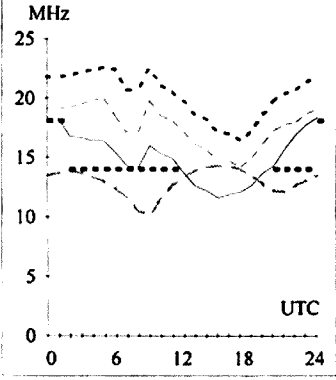
Hobart-Cairo 278 **Melbourne-Honolulu** 53 **Perth-London** 313 **Sydney-Ottawa** 58

First F 0-5 Short 14264 km Second 4F7-13 4E0 Short 8879 km First F 0-5 Short 14481 km First F 0-5 Short 15864 km



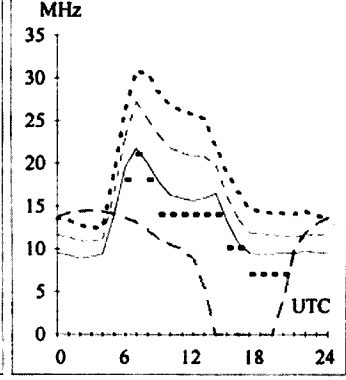
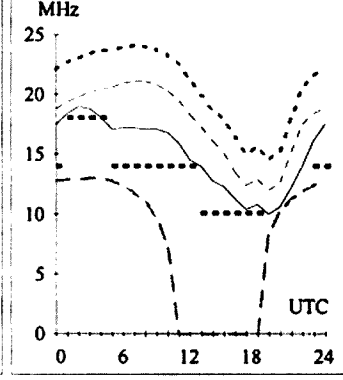
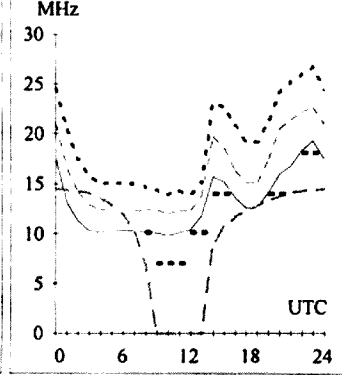
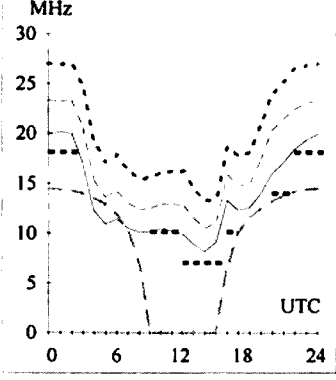
Hobart-Rio de Janeiro 169 **Melbourne-Moscow** 316 **Perth-New Delhi** 325 **Sydney-Tokyo** 350

First F 0-5 Short 12619 km First F 0-5 Short 14428 km Second 3F4-10 3E0 Short 7872 km Second 3F4-9 3E0 Short 7825 km



Hobart-San Francisco 61 **Melbourne-Washington** 75 **Perth-Wellington** 119 **Sydney-Warsaw** 313

First F 0-5 Short 12764 km First F 0-5 Short 16382 km First 2F4-10 2E0 Short 5256 km First F 0-5 Short 15589 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194
Fax: (03) 9584 8928
E-mail: vk3br@c031.aone.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Webb Electronics, Albury; Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX programs for IBM XT/ATs *** "RADFAXZ"** \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.
- **HAM LOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone". The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find

anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02 369 2008 BH, fax 02 369 3069. Internet address rhg@ozemail.com.au.

FOR SALE NSW

- HF antenna and tower: 60 ft (18 m) three stage wind-up tower, 3 sets of guys, turnbuckles, TH6DXX antenna, Daiwa rotator, dismantled Sydney, \$900. E G Popham VK2EZQ, QTHR, 019 460 437, 1900 - 2100 AEST.
- Kenwood TS-940S HF txcvr, VGC, s/n 7060094, \$2490 ONO, must sell ASAP (need the money!). Tony VK2DJW, QTHR, 02 9489 3312.
- Kenwood TS-440S HF txcvr, with ATU, mobile bracket, recently serviced by Kenwood, some marks on casing, handbooks, no box, \$1500 ONO. Peter VK2FFA, 02 4324 4160.
- Motorola Maxar VHF and UHF. Mizuho QRP 40 m CW txcvr. Tektronix 1230 logic analyser, \$3000. Sony ICF-2001 receiver, \$50. 8 channel scanning airband receiver, \$50. Paccom pactor, \$150. Adrian VK2ALF, 02 6452 5555.

FOR SALE VIC

- Kenwood TR2600A hand-held, s/n 5022246, EC, manual, \$200 ONO. Keith VK3AFI, QTHR, 03 5221 3658.
- Yaesu FT-101ZD HF txcvr, s/n 090484, with matching FV-101DM VFO, s/n 11010076, plus YD-148 mic, EC, full manuals, \$450. TH6DXX tri-band 6 el beam with manual, GC, \$400 ONO. Keith VK3AFI, QTHR, 03 5221 3658.
- Kenwood TS-700SP 2 m txcvr, incl external VFO and set of xtals, \$400. Icom IC-730 HF txcvr, \$400. Damien VK3RX, 03 5427 3121.
- Mazda E2200 diesel camper van, fitted out as radio unit for WICEN events, registered, RWC, dual battery, wired 12 V/240 V, Armstrong rotator, \$4,400. Philips FM-320, Kenwood TS-180S, set of Hustler antennas can be included extra. Reg VK3IT, QTHR, 03 5039 6245.
- Subaru portable generator with instruction manual, as new, 90 hours only, ideal for outback or home and caravan use, runs my Kenwood TS-50 txcvr OK, rated output 240 V/450-550 W, battery charging 12 V @ 8.3 A, very quiet, 18.5 kg, \$650. Homebrew storm cover free. Any trial at my QTH. H V Lonsdale VK3DND, 03 5153 0717.
- Icom IC-275A 2 m multi-mode txcvr, AC/DC, \$1200. Icom IC-475A 70 cm multi-mode txcvr, AC/DC, \$1650. Icom IC-25A 2 m 25 W FM mobile, \$150. Bird 4381 RF Power Analyst, \$700. Adam VK3ALM, 015 362 799, 03 9794 7873.
- Nally tower pole extender pipe, 165 x 4.88 mm, galvanised, 3 m long, can discuss delivery in Melbourne, Geelong or Western Victoria, \$200 ONO. David VK3XLD, QTHR, 03 5282 4440 after 6 pm.
- 36 inch 3 blade ceiling fan, Australian, all metal, with 5 speed controller, as new, \$30. Allan VK3AMD, QTHR, 03 9570 4610.

FOR SALE QLD

- Atlas 210X mobile txcvr, s/n 7232, plus Digi readout, \$300. Ten-Tec Delta 580, s/n 5800C528, \$400. Kenwood TR-2200A (VHF), s/n 452858, TR-3200 (UHF), s/n 620940, pigeon pair, \$200. Daiwa RF-550 RF speech processor. A P Kay VK4DJ, 1261 Bruce H'way, Black River QLD 4818, 077 786 031, 015 167 096.
- 4CX250B tube socket, chimney, \$15 set. Crystal ovens, 12 and 6.3 V, \$25 each. Split stator tuning capacitors, various. John VK4AAF, QTHR, 07 4928 6573.
- Yaesu FC-700 ATU, s/n 150043, full details in DSE catalogue page 87, no manual, \$140. Gordon VK4CXB, 07 5594 5115.

- Estate: Kenwood TS-830S trcvr, \$650. Kenwood TS-930S, \$1100. AT230 ATU, \$150. SP230 speaker, \$70. Yaesu FL-2100Z linear, \$650. Butternut 80-10 m vertical, Chirside 20 m wave vertical, Emtron 10/15/20 m vertical, Ringo 2 m vertical, Morse keys, books, manuals, catalogue 45 cent stamp. Peter Hadgraft, 17 Paxton Street, Holland Park QLD 4121, 07 3397 3751 (AH).
- Icom IC-740 transceiver, excellent receiver, good reports on transmissions on all bands, very good working order, appearance, 2 VFOs, RIT/XIT, memories on all bands, \$800. Call for copy of spec sheet. John VK4SZ, QTHR, 07 4061 3286, e-mail to john@comnorth.com.au

FOR SALE SA

- 40 ft tilt-over tower, \$150 ONO. J L Fairlie VK5FLJ, QTHR, 08 8671 0236.

WANTED NSW

- RCS or Q-Plus Reinartz coil in metal can, must be in good working order or unused. S R Dogger VK2KSD, QTHR, 02 6677 9292.

WANTED VIC

- Atlas 310X or 215X in good working order. Gerhard VK3EWM, QTHR, 03 9439 8353 (AH).

WANTED QLD

- Circuit details of Philips Type 1628 s/n 55 VHF telephone (AM) Tx, DCA ident Y5181, 124.1 MHz, all expenses refunded. Copy of audio tape made at the 1997 AGM at Redcliffe for the presentation of an award to Percy VK4CPA. Merv VK4DV, QTHR.

WANTED TAS

- HP355D attenuator knobs, two only. Trevor VK7TB, 03 6398 2118, fax 03 6398 1629.

MISCELLANEOUS

- The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

ar

Silent Keys

Due to space demands obituaries should be no longer than 200 words.

The WIA regrets to announce the recent passing of:

NL (Norman Lionel) PENN L30418
 RC (Rex) BLACK VK2YA
 D G TURNER VK3ADI
 M J A (Maxwell) WHITING VK5KTZ

Rex Black VK2YA

1912 - 1997

Born in 1912 and first licensed about 1932, Rex was active on-air right up until his passing on 19 November.

During WW II he was a Flight-Lieutenant in the RAAF, mainly training radio operators, but he saw active service on two training trips to Canada when he acted as ship's radio officer.

After the war, Rex ran radio clubs in schools where he taught, and encouraged many young people to become radio amateurs through the WIA Youth Radio Scheme, which he founded.

He also made many tapes to assist new amateurs to use CW, of which he was particularly fond. A foundation member of the Morsecodians Society, he was looking forward to their reunion in Wagga Wagga, due to be held late November. Vehemently opposed to CB, Rex was very concerned about the loss of amateur bands to CB Radio, seeing this as the thin edge of the wedge.

A member of the Wagga Amateur Radio Club, he will be greatly missed by his many friends both inside and outside the amateur radio fraternity, by his wife Kath, and son Bill and daughter Robin and their families.

Wagga ARC
 Blue Mountains ARC
 ar

QSP News

Free Ceramic Resonators Still Available

In his article *Receive SSB on Your Shortwave AM Radio* which appeared in *Amateur Radio*, October 1997 on page 8, Peter Parker VK1PK advised that readers unable to obtain the 3.58 MHz ceramic resonator required could obtain one from him on receipt of a stamped, self-addressed envelope.

Peter has advised *Amateur Radio*

that he still has a number of resonators left. The remaining resonators will be made available on a first come, first served basis, and none will be supplied after April.

So, if you need a ceramic resonator, be quick! Full details of the offer appear on page 10 of October's *Amateur Radio*

VK QSL BUREAUX

The official list of VK QSL Bureaux. All are Inwards and Outwards unless otherwise stated.

VK1	GPO Box 600 CANBERRA ACT 2601
VK2	PO Box 73 TERALBA NSW 2284
VK3	40G Victory Blvd ASHBURTON VIC 3147
VK4	GPO Box 638 BRISBANE QLD 4001
VK5	PO Box 10092 Gouger St ADELAIDE SA 5000
VK6	GPO Box F319 PERTH WA 6001
VK7	GPO Box 371D HOBART TAS 7001
VK8	C/o H G Andersson VK8HA Box 619 HUMPTY DOO NT 0836
VK9/VK0	C/o Neil Penfold VK6NE 2 Moss Court KINGSLEY WA 6026



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WIA Divisions

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division Address	Officers	Weekly News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blemings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1IET VK1LD 3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Geoff McGrorey-Clark Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00) Web: http://marconi.mpce.mq.edu.au/wia e-mail address: vk2wi@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz	VK2EO VK2EFY VK2KUR From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) Web: http://www.tbsa.com.au/~wia/vic/	VK3PC VK3XV VK3NC VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, (X) and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powerup.com.au	VK4HD VK4JPH VK4WX 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 28.400 MHz SSB, 29.220 MHz FM, 52.525 MHz FM, 146.700 MHz FM, 147.000 MHz FM, 438.525 MHz (Brisbane only), regional VHF/UHF repeaters at 0900 hrs Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM, regional VHF/UHF repeaters at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burtord Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday, 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 09 351 8873	President Wally Bingham Secretary Christine Bastin Treasurer Bruce Hediand-Thomas Web: http://www.faroc.com.au/~vk6wla	VK6KZ VK6ZLZ VK6OO 146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busselton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Ron Churcher Secretary Barry Hill Treasurer Mike Jenner	VK7RN VK7BE VK7FB 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart) Repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 (Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz).		Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times

Note: All times are local. All frequencies MHz.

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At first glance Yaesu's renowned Omni-Glow LCD screen is obvious, and its wide-angle view provides a wealth of information about the transceiver's operating status with multi-function metering, dual frequency displays and an Enhanced Tuning scale for DSP bandwidth, CW tuning, FM discriminator and more. Inside, the FT-920 is built around a rugged diecast unibody chassis which provides excellent heatsinking for the low distortion dual MRF255 160-6m FET power amplifier.

For more comfortable operating when weaker signals are present Yaesu's engineers dedicated themselves to enhancement of real-world signal to noise ratios, and after thousands of hours of design and testing have produced an industry-leading 33.3MIPS (millions of instructions per second) processing speed DSP in the FT-920 that provides a two-parameter noise reduction system with 32 steps of front panel adjustment. This amazing system also provides dual control DSP passband tuning, DSP auto-notch filter, an amazing new transmit Digital Speech Processor, DSP mic

equalisation, fast acting DSP VOX circuitry as well as a Contest-ready Digital Voice Recorder!

Other features include an all-band (160-6m) auto antenna tuner which also provides greater receiver band-pass protection, Direct Digital Synthesis for clean local oscillators, selectable frequency-optimised receiver front-end pre-amps, and a Shuttle Jog tuning ring for fast QSY. A Dual Watch receive system allows you to check for band openings, especially handy when monitoring 6m. Also provided are SSB/CW/FM operation (AM with optional filter), 127 memories with alphanumeric labelling, IFshift and IF noise blanker to fight interference, plus an extensive menu system for selecting most "set and forget" functions.

The FT-920 is supplied with an MH-31B8 hand mic, DC power lead and comprehensive instruction manual.

Why not call for a copy of the Yaesu 6 page FT-920 colour brochure to learn more about this efficient transceiver that's without peer in its price class.

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Amateur Radio



February 1998

Volume 66 No 2

Journal of the Wireless Institute of Australia



IN THIS ISSUE:

- SSB by the Fourth Method
- Simple Transmission Monitor and Interference Sniffer
- WIA Awards and DXCC
- Review of the Yaesu FT-8100R Dual Band FM Mobile Transceiver

Plus lots of other articles, opinions and special interest columns

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Cover

Official NASA photo of Australian astronaut Dr Andrew (Andy) Thomas KD5CHF/VK5MIR who is now aboard the Russian space craft MIR (see QSP News item on page 32).

BACK ISSUES

Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society
Founded 1910

Representing the Australian Amateur Radio Service -
Member of the International Amateur Radio Union
Registered Federal office of the WIA:
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■ Comment

Editor's Comment

"Herding Cats"

This delightful phrase was used in a letter to me from David Horsfall VK2KFU. It was in the context of uniformity, or its lack, in standardising low-voltage plugs and sockets (the dreaded T-plug mentioned in several recent issues). David's words were, "*Given that organising amateurs is akin to herding cats, I doubt whether there'll be any consensus...*"

David may well be right as far as "standard" plugs are concerned, but I sincerely hope he is wrong as regards the future of the WIA or even amateur radio in Australia. One of the biggest problems plaguing the WIA over the last decade has been the divergence of opinions both among members and between Divisions. This has had the result of splitting us into fragments, each pointing in different directions; "a herd of cats" indeed! Because of this, many potential members decide not to join the WIA, and our diminishing numbers become even less effective.

Could it be that what is needed is more of the herd mentality, more of "follow the leader", provided the leader appears to know where the path is leading. Otherwise we may "wait until the cows come home" before any progress occurs!

Bill Rice VK3ABP
Editor

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "*How to Write for Amateur Radio*", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

■ Comment

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

The Customer Is Always Right!

In the September 1997 issue of *Amateur Radio*, I advocated changes to make the WIA a more efficient and effective organisation. Responses were published from Chris Lowe VK6BIK (November) and Neil Penfold VK6NE (December).

Neil's letter shows that the WIA has a fair way to go before it can regard itself as a customer-focused organisation that delivers services members want. In one sentence he dismisses the possibility that organisational factors may be causing some people to not renew. His solution to our membership woes? For each member to keep their membership current and recruit new ones. However, because membership is voluntary, people cannot be forced to do as Neil suggests. Rather, we need to make the WIA an organisation whose product is so good that almost every amateur will want to join.

The WIA is a customer service organisation operating in a competitive market. Many other clubs and businesses are competing for your dollar. But if business is down, you can be sure that they don't whine that it's because not enough people are coming through the door. They already know that! Instead, they ask themselves *why* they are not attracting custom, seek to offer products people want, and promote themselves better. If there are things about their organisation that hinder the ability to provide good customer service, they change them!

Instead of blaming members for not renewing, WIA office-bearers should continually ask themselves how member services can be improved. Running competitions to attract new members is fine, but before we try to market ourselves we need to ensure that the services offered are what people want. The continuing loss of membership demonstrates that we are failing to meet some members' needs.

Restructuring the WIA along the lines suggested will not necessarily cure WIA Federal's budget ills. However, if it leads to a better use of member funds and volunteer time, much good will have been done.

A major hidden cost of the current structure is in volunteer time, especially at

Divisional level. If Divisional Councillors could be relieved of the duties of attending dreary Council meetings or handling membership records (where any slip-up could lose a member for life), maybe they'd have more time for providing real services like running broadcasts, building repeaters, and promoting amateur radio. Leave the paperwork to a professional Federal Office, and transfer Divisional responsibilities to either the Federal body or affiliated clubs.

Let's take one example of duplicated effort. At the moment, most WIA Divisions have an Internet Web page, which has taken many hours of volunteer time to create. However, there is no official Federal web page. The result is a very fragmented presence on the Web with information on some Federal services impossible to find. A reformed national WIA would have just one Web page, which would greatly assist publicity efforts. In December's *Amateur Radio*, ZL2ALJ asks if the WIA (Federal) has a Web page, and if contest results could be posted on it. That's just one example of what could be done on a national Web site. Furthermore, all this could be achieved with a fraction of the volunteer time currently required to maintain six separate Divisional Web sites.

Why have I paid so much attention to the proper use of volunteers' time? The answer is simple. Volunteers deliver most WIA services. A shrinking volunteer base means a diminishing capacity to deliver services to members. This can only mean accelerated membership loss, as more people find fewer benefits in WIA membership. And, don't kid yourself, it's already happening; the downgrading of the VK3 broadcast from a weekly to a monthly service is a prime example. Volunteers don't grow on trees, and if we don't try to make the best use of what we have, we will not succeed.

So to Neil, and others who agreed with him, please remember that "the customer (member) is always right", and you won't go too far wrong!

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The response of the Federal President to recent correspondence on Federal affairs needs to be revisited.

With regard to policy and planning, Neil must have a different understanding of the meaning of these terms: "policy" is a course or principle of action proposed or adopted; "planning" is the detailed method by which a thing is to be done.

Neither of these definitions applies in any meaningful way to the future direction of amateur radio as expressed by WIA Federal – the sins of omission that I referred to in my earlier letter (September *Amateur Radio*).

To be sure, licensing submissions, emergency services, electromagnetic compatibility standards and the like – the nuts and bolts of amateur radio – are specific outcomes of related policies and some planning, germane to the operating standards and other peripheral activities of a technical hobby, but they are NOT policies and planning as a result of intense consideration of the philosophical aspects of amateur radio, eg, where the hobby is or should be going and how it sees itself long/short term, assuming that it is still a technical interest with a scientific background. A revamp of the definition of amateur radio and qualifications of amateur operators may help to explain what it's about after one has worked out what it is, but it's not planning or policy in the sense of defining future directions.

Again, the platitudes trotted out on command to government ministers, et al – how we are a valuable resource etc, etc – are little different from the speeches we made 30 years ago on similar occasions. Useful PR and reinforcement of aims but not a statement of what amateur radio is/will be/or could be.

National and international representation will have little meaning or relevance if the implications of technical change, social interaction, and competing interests are not addressed and solutions found. In the near future, amateur radio may be as relevant as the Mechanics Institutes are today as a means of technical education – fine in the late 1800s, but...

Contrary to what Neil says, I have previously made a case for a different organisational model in relation to WIA Federal. It was submitted (March 1997) to Editor, Divisional Councillors AND the Federal President, but because there appears to be a built-in discriminatory policy of censorship or "active filtering", it was neither published nor acknowledged, the rationale being, apparently, that contentious matters may reflect adversely on Council or

steal its thunder – shades of George Orwell, or Fahrenheit 451.

However, the comments made were as follows:

We have, at present:

1. Federal Council, setting policy presumably, which meets every three months;
2. Federal Executive, appointed by Council, whose directors assist in implementing policy modus operandi unknown;
3. A Federal Secretary in Sydney;
4. A Federal Office in Melbourne;
5. A Federal President in Perth.

Electronic communication is fine, to a point, but how can any CEO, geographically divorced from support staff, operate effectively?

Would it be too much to ask that a fundamental inquiry be undertaken to examine the relevance of the Institute to members and to regulatory authorities; and indeed, whether amateur radio, as we currently know it, has any relevance in 2000 and beyond, and if not, what changes should be made?

Assuming the latter point has some meaning, the ramifications of the Institute and its Divisions agreeing to change should be considered.

Some suggestions:

A. Absorption of the Divisions and their resources to establish a properly funded company, suitably staffed with a CEO accountable to a Board for implementation of policy;

B. This company should have income generating interests (eg. computing, communications).

The present system and its administration are outmoded, depend too much on voluntary labour and income almost solely derived from subscriptions, which are, or will become, less cost effective for benefits obtained, especially as costs and technology escalate. The administration required today is more complex and needs better qualified, full-time people to manage the organisation.

Finally, a comment on finances. Membership drives are only part of the story – necessary, but never enough to provide a lasting 'fix'. Have a look at the figures: a \$44,000 loss by WIA Federal will, on my calculations, mean that the breakeven point would require an additional 950 members, plus those needed to replace defections and SKs.

Admirable though the reciprocal agreements are, and promotion of amateur radio might be, in developing countries, is the level of expense and administrative activity providing value? Can some financial assistance be obtained from other sources? Could one be bold enough to suggest that

manufacturers of amateur equipment and accessories have a vested interest in seeing amateur radio develop internationally as well as at home, but are not helping the acquisition of new devotees?

It could be said that that WIA, ARRL, RSGB, etc spend considerable sums promoting amateur radio in their jurisdictions; in fact, marketing amateur radio on behalf of equipment manufacturers. Why should they not provide some "sponsorship" in return?

There are very few known donations or sponsorship from manufacturers in Japan or anywhere else. The meaning of the word "amateur" may well be uppermost in the minds of some manufacturers, who therefore believe that they should not contribute, but perhaps this needs to change, as it has in sport.

In conclusion, communication and technical prowess are what amateur radio is supposed to be about; yet, administratively and electronically, it seems to have lost its way – like a lost ship hooting forlornly to other lost ships in a fog of obscured purpose.

Peter D Williams VK3IZ
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Metung VIC 3904

Need for Change

As a new member of the WIA (1997) I have been reading with interest the correspondence to the Editor regarding the need for change to the WIA. To gain further information on the subject I have gathered back copies of *Amateur Radio* and other Australian radio magazines. I am particularly interested in what happened to 'The 10 Year Plan'? From my reading of members' comments, it would seem the organisation could be placed in the category of a dinosaur with an urgent need to refocus and reorganise.

I was very concerned that members' suggestions for structural reorganisation were flippantly passed over without serious examination by the Executive body. This either suggests a narrow-minded belief that all is currently okay or unwillingness by the executive to look at possible changes.

We are fast approaching the new century. To survive we need a dynamic, trim, efficient and cost effective organisation. New members are only attracted to such a body.

To achieve this order of efficiency, we need good management that understands and listens to the needs and requirements of the majority of our membership. At a recent gathering of amateurs these needs were discussed, and a brief summary follows:

1. To have our hobbies' best interests represented and fought for in the political arena:

- a) ACA (Australian Government); and b) ITU, etc;
2. Conduct regular news broadcasts;
3. Reasonable (low) membership fees;
4. Produce *Amateur Radio*;
5. Unobtrusive, efficient and effective management that allows me to pursue my hobby (indicating the membership is tired of the current management/mismanagement and infighting, and would prefer to focus on our hobby); and
6. An understanding that amateur radio is a hobby.

Amateur radio is our hobby and we need an effective well-run national body to ensure we do not become a dinosaur or end up as a museum exhibit. I would encourage members to contact their state Council and let them know your views. Change can be initiated starting from this level. Encourage your State Federal Councillor at the next Federal Convention to reflect your views. It is a pity there is not a member vote for all Federal Executive and Council officers, as this may solve some of our problems!

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Morse Speed

All amateurs are aware of the pivotal part which CW played in the establishment of radio communications and amateur radio as a hobby.

The expert practitioners of the art have always held a pre-eminent position and have derived great satisfaction in their preferred method of communication. The necessity for Australia amateurs to support our commitments to international agreements to require the ability to send and receive messages in Morse code for access to all HF bands is well established.

However, when the recent vote was taken on the issue, HOW MANY WERE AWARE THAT NO SPEED IS REQUIRED?

The logical outcome of this is that it is well within the rights of Australian amateurs to fulfil the requirements for a full call ticket at FIVE WORDS PER MINUTE!

This should be implemented immediately for the good of amateur radio. The upgrade 4 of all the relevant licences would provide a surge of enthusiasm which our hobby desperately needs without any fear of an influx of 'yobbos' or undesirables which seems to worry many old-timers.

I appeal to all amateurs to support this change in support of the future good of our important hobby.

W B Weiley VK2AZW
13 Bourne Boulevard
Nelson Bay NSW 2315

Alternatives to Morse

Unfortunately, there are too many amateurs who will ardently defend Morse until they pass on; and, until they do, they will not allow the organisation that represents us (Wireless Institute of Australia – WIA) to make representations to have the Morse requirement for HF removed at the ITU-R World Administrative Radio Conference.

I feel it is something to do with “I am better than you” because I can copy Morse for these people. As an examiner for amateur radio, I view Morse as a practical test that you could operate a radio and make a communication in the early 1900s; however, as a practical test today, it bears no relevance to real efficient communication.

I favour the introduction of some more relevant practical tests which could be optionally substituted for the Morse component of the AOCF. For example, fault finding a transmitter/communication system which is faulty. If you can fix it, or correctly diagnose the solution in the time allowed, then you pass the “Practical”. The Regulations and Theory would remain the same.

To really stir the pie and weed out the stalwarts, we could RE-EXAMINE ALL AMATEURS EVERY FIVE YEARS with the current syllabus and re-allocate the certificates of proficiency accordingly. This would ensure that amateurs keep up-to-date and continue to experiment.

Unfortunately, there are too many black box operators out there!

I continually hear things like, “If I pull the cover off it will void the warranty!”. From the average person this would be OK, but I am saddened to hear it over and over again from “qualified amateurs”!

I am sure the re-examination might reduce the number of amateurs considerably since many simply would not pass. Some may see this as bad, but it would concentrate amateurs on experimenting with current communications technology, which is largely not happening now. Unless something is changed in a way that encourages keeping up to date, the amateur service will continue its slide into irrelevance and its ultimate demise.

Since this re-examination would be very unpopular, it could never be put up by the WIA; however, the ACA could make the changes.

Neil Pickford VK1KNP/VK7KNP
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Novice CW Segments

The week-end of 13/14 December featured the ARRL 10 metre contest and I

listened out on the low end of the band, ie 28,000 to 28,100 kHz. As we Novices know, this section of the band is taboo to us.

However, it was interesting to hear the number of CW operators, mostly American, some J stations and two ZLs, but no, repeat no, VKs – at least not at the times I listened. All operators were expert in CW, with sending speeds ranging between 15 and 30+ wpm. So, I concluded that CW is not the dying art as some – in the words of (SK) VK2PA “lip flappers” – SSBers – would have us believe.

This leads me to the question: if the “powers that be” could open the 15 m band from 21,200 to 21,300 kHz to accommodate SSB, could they not give similarly to the Novice CW operators on the 10 m band, by opening the CW end of that band, as there are some excellent CW ops on DX that I, for one, would like to QSO with.

Don't say, “well, get your full call”. I am 76 years old next month and I have been doing CW since I was nine years old. Theory is not my prize subject, and I do not intend to give my love of the Morse code away at this stage in life.

Lloyd Collier VK2VZB
7 Whitmont Crescent
St Ives Chase NSW 2075

Still More on T-Plugs

Regarding those ubiquitous “T” connectors, there is an industry standard as to how they should be wired.

They were originally used by the Japanese automotive industry and, if you have a veteran Toyota Celica (1972) like me, you will find them used in the harnesses for lighting, etc. The bar of the T is negative and the upright is the positive; this is the logical view as they are called “T” connectors. Those of us who have had to replace a windscreen washer bottle will note they are standard fittings on those as well, which plug straight into the harness.

When I salt-mined, a company I worked for serviced the State Emergency Radios. You guessed it, the horizontal bar was always negative.

Thought of the day! If there is an option, you can be sure someone will take it.

Dave Smithdale VK6DX
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ar

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

420-450 MHz is wanted by Australian commercial interests

RF emission regulations threaten handhelds, mobile rigs,
and suburban home stations, with bureaucratic limits

More of 7 MHz is wanted by global broadcasters

RENEW YOUR MEMBERSHIP RECRUIT NEW MEMBERS

WIA action has: ■ cut the cost of licence fees, ■ cut fees on beacons and repeaters, ■ improved licence conditions, ■ retained access to 50 MHz and 576 MHz; and more.

The WIA maintains representation at World Radio Conferences, and at home, to the ACA and on the Radio Communications Consultative Council. Strength in numbers. Subs help pay.



YOUR
HOBBY

YOUR
VOICE

■ WIA News

Roger Harrison VK2ZRH,
Federal Media Liaison Officer

WIA Revives Submission for LF Band Allocation

The WIA-ACA Liaison Team is to prepare and submit a new proposal for an amateur band allocation in the low frequency spectrum below 200 kHz.

The Australian Radiofrequency Spectrum Plan, the instrument under the Radiocommunications Act which governs the allocation of the spectrum between 9 kHz and 400 GHz in Australia, is presently under revision with the new Spectrum Plan to be gazetted in January 1999. The last revision was gazetted in January 1997, replacing the April 1995 issue.

The WIA's move follows the allocation to European radio amateurs of 135.7-137.8 kHz by the Conference of European Post and Telecommunications (CEPT), also to be available to UK amateurs later this year.

Previous applications by the WIA for an LF band allocation focused on 160-190 kHz, which is allocated in Australia to the Fixed service, with Aeronautical Radionavigation having a secondary allocation. These allocations apply throughout ITU Region 2 (the Americas) and Region 3 (Asia-Pacific).

New Zealand General Class amateurs have been permitted since 1990 to use 165-190 kHz on a non-interference to other services basis. In recent years, a number of Australian amateurs have conducted experiments in this band, but had to obtain a Scientific licence in order to do so. Contacts over 2000-2500 km have been made between New Zealand amateurs and these Scientific-licensed stations held by amateurs in Australia.

Four Australian amateurs currently hold Scientific licences in the LF spectrum below 200 kHz, three with frequency allocations on 196 kHz, and one on 177.5 kHz. It costs more than \$200 to have a Scientific licence issued for a single transmitting frequency, but renewal is less than \$40.

A search of the Australian Communications Authority's licence register reveals only six frequency assignments between 100 kHz and 200 kHz, to a total of nine licensees, not counting the Radionavigation assignments 100 kHz and 200 kHz. The assignments are at 105 kHz, 135.12 kHz, 158.12 kHz, 160 kHz, 177.5 kHz, and 196 kHz. The licence for the 160 kHz assignment, held by Texas Instruments and relating to their TIRIS traffic information

system, expired last year and had not been renewed as of January.

Apart from the 177.5 kHz and 196 kHz assignments held by amateurs, the three remaining assignments are licensed to General Motors Holden Australia (GMHA) in Elizabeth, South Australia, for operation at single, fixed sites, not Australia-wide.

Nine band allocations in the Australian Radiofrequency Spectrum Plan cover the 100-200 kHz spectrum, generally for Radionavigation, Fixed, Maritime Mobile and Aeronautical Radionavigation. They are generally consistent with Region 2 and Region 3 ITU allocations and, in some instances, Region 1. For all of these services, LF technology is being replaced by newer systems on other frequencies, so this usage of this sector of the LF spectrum has declined. There are no current aeronautical or maritime radio navigation assignments between 105 kHz and 196 kHz.

In view of the European allocation at 135.7-137.8 kHz, and the 165-190 kHz amateur operations permitted in New Zealand, coupled with very low remaining use of LF allocations, the WIA is seeking to have Australian amateurs permitted access across 100-200 kHz, with guard bands protecting 100 kHz, 105 kHz, 135.12 kHz, 158.12 kHz and 200 kHz.

As there is no commercially produced LF amateur equipment, such an LF allocation would of necessity encourage home construction and experimentation by amateurs. Australian amateurs could draw on the experiences of European amateurs at 135 kHz as well as the past Australian and New Zealand amateur experiments at 165-196 kHz, and could contribute to further experimentation in both technology and propagation.

Power transmission line communications

and mine communications systems (which employ 'leaky' cables) both use this part of the LF spectrum, but the NZART report there have been no interference problems arise from amateur use of 165-190 kHz in New Zealand.

While practical antennas at these frequencies have efficiencies of fractions of a per cent, ground wave propagation follows the Earth's curvature with quite low losses so that, even with only milliwatts of effective radiated power, daytime ranges extend over hundreds of kilometres with stable, consistent signals. At night, skywave propagation can extend the communications range to 1000s of kilometres, but with strong signal enhancements and deep fades. Noise from electrical storms is greater at night than in the day. Man-made noise levels arise from mains power lines but, as it is conducted, is readily avoided or reduced with simple techniques.

In Europe, the RSGB recently reported that 136 kHz signals were copied over a distance of almost 1000 km, between DA0LF running an ERP of 50 mW in Frankfurt, Germany, received by G3XDV along with G4JNT, G3WKL and G3PLX in the UK. Digital signal processing (DSP) receiving techniques and very slow Morse were used. Late in December, G4GVC heard OH1TN on 136 kHz, a distance of 1762 km, according to the RSGB's *GB2RS News* for 11 January.

Which Australian licensees should get access to such a band? There is a view that all licensees be permitted use of an LF allocation, should it be granted, in order to encourage the greatest degree of self-education and experimentation, particularly for newcomers of all ages, in keeping with the tradition of amateur radio. The sticking point here is the existing International Radio Regulations which require amateurs to hold a Morse code qualification for access to bands below 30 MHz. But a number of countries have permitted access to a few amateur bands, or band segments, below 30 MHz for no-code licensees, notably Japan and Korea (as well as Australia, with 29-29.7 MHz for Limiteds).

[Released 12/1/98]

Sign up a new WIA member today - we need the numbers to protect our frequencies and privileges

WIA Responds to ACA on RF Emission Limit Proposals

The Australian Communications Authority (ACA) has proposed introducing mandatory regulations to limit people's exposure to radio frequency electromagnetic energy, publishing a discussion paper on the issue last October and calling for public comment (see *WIA News, Amateur Radio*, page 3, December 1997).

Australian amateurs would be affected under the proposals, by having to demonstrate compliance with limits imposed by Australian Standard AS 2772.1, while commercial amateur equipment would be affected by having to meet certification under the standard, with handheld VHF and UHF transceivers being particularly affected. Amateurs in the USA now have to meet mandatory RF exposure standards under Federal Communications Commission (FCC) guidelines.

The WIA has responded to the ACA's Discussion Paper, with a five-point commentary. The WIA's representative on the Radiocommunications Consultative Council (RCC), Dr David Wardlaw VK3ADW, also a member of the WIA-ACA Liaison Team, discussed with the ACA the issues raised in their proposals following an RCC meeting in December.

In the WIA's response, written by David VK3ADW in consultation with the other members of the WIA-ACA Liaison Team, it was pointed out that the Australian Standard on non-ionising radiation, AS 2772.1, is presently being revised, a draft standard has yet to be agreed, and there are some differences from the existing standard which make it difficult to comment without knowing the final wording of the standard which is intended to be made mandatory. Compliance with AS 2772.1 is voluntary at present. In addition, the current standard and the draft new standard differ from the international standard, which is less stringent in some portions.

Clarification was sought on the proposed compliance arrangements for commercially-made amateur equipment.

The WIA response suggested that, in regard to Amateur licensees, the ACA take a lead from how the FCC in the US has approached amateur station compliance with RF exposure standards. They have a system in which stations having nominated power output thresholds, or lower, on the various amateur bands are "deemed" to comply, otherwise they have to undergo a routine technical evaluation. The power

thresholds for most bands are above the powers typically used by many US amateurs.

In addition, the WIA response questioned the ACA's proposed approach to compliance for mobile and handheld transmitting equipment, which lumps handheld transceivers together with mobile phones. Handheld transceivers are operated quite differently from cellular mobile phones, have push-to-talk operation whereas mobile phones transmit at regular intervals when not in use as they are 'polled' by the cellular network. Even though they may have higher powers than mobile phones, handheld and mobile transceivers have much lower transmit duty cycles.

The WIA's position is that compliance with RF emission standards should not impose unduly onerous technical or administrative requirements on amateur licensees and that the proposed framework take into account the quite different, if not unique, nature of amateur station operation.

The ACA extended the deadline for responses to its Discussion Paper. In January, the ACA told *Australian Financial Review* journalist, Helen Meredith, that it was still taking submissions, was seeking telecommunication industry comment, and will hold seminars in Sydney and Melbourne before making a final decision (*AFR*, 13 January, p 22).

[Released 13/1/98]

Amateur Radio Turns 100

The hobby of amateur radio has reached its centenary. According to the Radio Society of Great Britain (RSGB), in 1898 a young army officer, Lieutenant M C J Dennis followed the lead of Guglielmo Marconi, setting up his own experimental wireless station at Woolwich, in London.

Lieutenant Dennis later claimed that his station was the "first non-professional wireless experimental station in the world." His claim was never challenged, thus establishing Dennis as the world's first true radio amateur.

The RSGB is marking this centenary year of amateur radio by launching two new awards for HF and VHF-UHF activity between 1 January and 31 December. (*Thanks to Qnews and the RSGB's GB2RS News*).

[Released 13/1/98]

ACA Grants AX for Australia Day Long Weekend

A late concession from the Australian Communications Authority (ACA) in mid-January granted Australian amateurs use of the 'AX' prefix for the 72 hours (local time in each State and Territory) of the Australia Day long weekend.

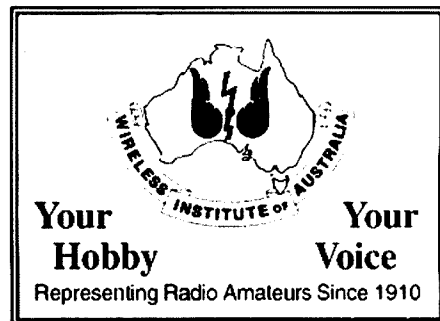
In 1997, the then-SMA permitted use of the AX prefix only for the 48 hours of the Saturday and Sunday, 26-27 January.

WIA Federal President Neil Penfold VK6NE wrote to the ACA in December, seeking confirmation of the AX prefix in celebration of Australia Day in 1998, as it had been granted in 1997. However, the confirmation received by the WIA, after the January issue's deadline, only granted use of the AX prefix for Monday, 26 January 1998, and not the 24th-25th, as advised in January's *Amateur Radio* magazine.

Following communications between WIA-ACA Liaison Team members Neil VK6NE and Roger Harrison VK2ZRH and

the ACA, the ACA agreed to the WIA's preference, from its original December 1996 submission, for having use of the AX prefix over the three days of the Australia Day holiday weekend each year. *WIA News* releases were immediately sent to all Division broadcast officers, posted to the packet radio network and Division Web sites.

[Released 13/1/98]



Auto Industry Moves to Control Electronic Pollution

So said the headline on a Christmas release from the Ministers for Transport and for Communications, Mark Vaile and Senator Richard Alston, respectively. The occasion was the announcement of formal agreements between the Australian Communications Authority (ACA) and the Federal Chamber of Automotive Industries (FCAI), which include compliance with broad-band and narrow-band electromagnetic emission requirements, and immunity of automotive devices to electromagnetic interference (EMI).

The new code also includes additional vehicle-specific requirements over and above the ACA's mandatory electromagnetic compatibility (EMC) framework.

Vehicle equipment failures resulting from EMI can range from jammed keyless entry systems or faulty vehicle alarms, to failure of electronically controlled equipment such as brakes. Emissions from vehicles can affect nearby radiocommunications equipment, as every radio amateur well knows.

The industry code of practice, developed by the FCAI, which applies to all its members, sets limits on both the unintended emissions from vehicles and standards for the susceptibility of vehicle electronic to emissions from elsewhere. The code and standards are to be phased in over the next few years and will apply to all FCAI members' vehicles introduced onto the Australian market.

Meanwhile, Melbourne automotive electrical and electronics manufacturer, Robert Bosch, is doing their bit to save Australian motorists the anguish experienced by their British brethren over interference to RF-operated keyless car locks.

During 1995-96, the UK Automobile Association received more than 16,000 calls from car owners with immobilised or locked vehicles because their 433.05-434.79 MHz 'radio access key entry' (RAKE) systems for door locking/unlocking combined with engine immobilisation, were clobbered by nearby amateur and other services' transmitters operating in the same, or adjacent, frequency band.

The 433.05-434.79 MHz band is allocated as an ISM band on the Continent by the European post and telecommunications conference (CEPT). The RF security systems entered Britain with cars imported from the Continent. But in the UK, 430-440 MHz is allocated to radio amateurs and the military, and adjacent bands to mobile two-ways.

The RF car keys' 10 micro-watt transmitters, or the system's receivers, were simply swamped by stronger signals. A classic case of electromagnetic incompatibility. Last year, despite being warned of "the British disease," the Australian Communications Authority issued a Class licence for 433.05-434.79 MHz devices, smack in the middle of the 420-450 MHz band shared by defence and amateurs.

Another VK2 Wins the Fluke DMM!

Lucky winner of the November new recruit draw for the Fluke 12B digital multimeter was Mr N F Murphy VK2GAN, of Bean Creek, Old Bonalbo NSW, who joined the Queensland Division of the WIA.

Every month throughout 1997 there was a draw from among new WIA recruits joining each month. December was the last chance to join the WIA and enter the monthly draw to win a Fluke 12B digital multimeter.

The 12 prizes for the year have been generously donated by Philips Test and Measurement. Fluke is the world's pre-eminent manufacturer of digital test instruments.

The Fluke 12B, worth \$195, measures AC

and DC voltage (with auto-selection above 4.5V), resistance and capacitance from 1000 pF to 1000 µF. The instrument features a simple rotary dial, a 4000-count liquid crystal display, and diode and continuity testing. Its "continuity capture" feature indicates intermittent open and short circuits. It comes with test leads and a two-year warranty.

[Released 13/1/97]

Membership recruitment advertisements appeared in each issue of *Amateur Radio* magazine, and in *Radio and Communications* magazine throughout 1997. Membership recruitment and renewal advertisements also appeared on WIA Divisions' World Wide Web pages on the Internet.

[Released 13/1/98]

Is VK4HA The World's Oldest Amateur?

Harry Angel VK4HA celebrated his 106th birthday on 14 December last year, the occasion drawing the attention of the media, with his birthday celebrations broadcast nation-wide on a number of TV station networks.

According to *Qnews* editor, Graham Kemp VK4BB, Harry was born close to Fulham in the UK on 14 December 1891. He arrived in Australia from California after a trip round Cape Horn as a very young sailor.

Harry enlisted at the outbreak of World War I and was on the first ship of Australian soldiers to leave for the war zone. He was posted to a communications unit in the North African desert near Alexandria, in Egypt.

Following repatriation to recuperate in Rockhampton's military hospital, he settled in Brisbane, opening a radio repair shop, first at Toowong, later moving to the Grovely area. He sat and passed his AOCIP in August

1935, alongside WIAQ Historian, Al Shawsmith VK4SS.

The news of Harry's birthday made it into the *ARRL Letter* for 9 January.

Several years ago, Harry's birthday also received world-wide publicity, with the challenge for any older amateurs to be identified. No names have come forward so perhaps Harry VK4HA is after all the world's oldest radio amateur.

[Released 13/1/98]

**Help protect our
frequencies –
become an
Intruder Watcher
today**

ACA Finally Puts Licence Details on the Internet

The Australian Communications Authority (ACA) finally made their licensee register details available through their Internet Web site in mid-December. Earlier in 1997, the Spectrum Management Agency, since amalgamated with AUSTEL to form the ACA, planned to make the register available by mid-year.

Search options at the www.aca.gov.au site permit searching the register by licence call sign, by frequency, by assignment (if known), by client (if details are known), or by site (if details are known). You can search licence assignments by a given frequency or within given upper and lower frequency limits.

A search just above the top end of 80 m, from 3700-3740 kHz, reveals some 1200 assignments! The licence fees collected for this 40 kHz slice of HF are calculated to be more than \$40,000 annually. What would 80 m be worth?

The contents of the register for individual amateur licensees include call sign, licence category, licensee's name and postal address (if different from station address - otherwise, the station address), date last renewed and next renewal date, and status of the licence, eg whether it is current, expired or due for renewal. Other licences held by a licensee can also be retrieved, eg Amateur Intermediate licensee D I Horsfall VK2KFU also holds an Outpost Non-assigned licence, call sign VLG40.

WIA to Assist Promotion of Amateur Radio in Nepal

WIA Federal President, Neil Penfold VK6NE, in company with Joe Fazio VK6BFI, visited Nepal in December on a DXpedition operation at the invitation of Richard Wurster 9N1ARB, who works for the United Nations' Food & Agricultural Organisation in Nepal. Neil operated as 9N1NE and Joe as 9N1BFI, after paying \$AUS195 each for operation on 14 MHz and 21 MHz only.

Neil took the opportunity, as WIA Federal President, to speak with top level officers in the Nepalese Ministry of Tourism and Communications, outlining the amateur system in Australia and the benefits amateur radio can bring.

Getting an amateur licence in Nepal is no easy thing. Having passed their examination, a prospective amateur then has to obtain permission from the police, the military and the communications minister to get on the air. Neil offered the Nepalese administrators assistance from the WIA in the amateur examinations area, which was well received.

Efforts are being made to maintain links with the few Nepalese amateurs and the Ministry of Tourism and Communications in order to advance promotion of amateur radio in the country.

[Released 13/1/98]

Meanwhile, the ACA has launched a new 'house' publication, called *Connections: The Australian Communications Authority Bulletin*.

To be published quarterly, the first issue was launched in December last year. The ACA said *Connections* is designed to provide information about the communications industry to the public, the radio-communications and telecommunications industries.

The first issue included an introduction from ACA chairman, Tony Shaw, outlining changes to communications regulations and describing the role of the ACA and its key relationships. Articles included an update on spectrum auctions, the new ACA corporate plan and the telephone calling number display issue.

Copies of *Connections* can be obtained from any of the ACA's offices around Australia.

Also in December, the Minister for Communications, Senator Richard Alston, announced a fourth appointment to the ACA, Ms Esther Alter, who will be a full-time member. She is a qualified legal practitioner with experience in private practice and academic teaching positions.

Other full-time members are Tony Shaw (chairman) and Dr Bob Horton (deputy chairman). Associate Professor David Round is a part-time member.

[Released 13/1/98]



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ar

News

WIA Divisions

Forward Bias - VK1 Notes

Tom VK0TS/VK1TS Returns

As you may be aware, Tom VK1TS has returned from a stint on Macquarie Island during which time he was quite active as VK0TS. He called the other day to say that the QSL cards from his time in VK0 are now being dispatched and to pass on his thanks to all he worked. Tom will be giving a presentation on his experiences down south at a forthcoming meeting; keep an ear on the broadcast or an eye on the Website for details.

Fox Hunts

Neil VK1KNP organised a fun-filled start to the new year in the guise of a series of fox hunts prior to the regular technical group meetings on Thursday night. Neil was kind enough to write up the first of these hunts for this month's column:

"The Hounds gathered at the Communications Lab for the first Fox Hunt of 1998 on Thursday, 8 January. A total of 10 hounds started, forming into eight teams, seven in vehicles and one on foot. Neil VK1KNP placed the fox around 2 km from the starting point in the grounds of the Canberra University.

"Within 20 minutes the pedestrian Peter VK1PK was in the vicinity of the fox while all the vehicle based hounds were driving in circles around the wrong side of the University. Laeli VK2LO and Paul VK1TEE were the next team on the scene joining Peter in the vicinity of the fox, while some other hounds were searching garbage hoppers 300 metres away on the other side of the campus.

"The Fox had been placed in an open grassy area which had been mowed before the summer, and it was carefully hidden under the weathered grass cuttings. This location was adjacent to a small forest, and so all the hounds had assumed it was in the forest and were busy searching trees on the edge when Neil VK1KNP arrived back at the fox location.

"Peter and Laeli spent a good 25 minutes in the vicinity of the fox on foot, until Peter stepped on it and found it. The antenna was a piece of brown wire sticking up out of the grass with some weeds. As Peter was somewhat jubilant at finally finding the fox, he sort of gave the game away to Laeli's

team; however, no other hounds were present. The next hounds to arrive were Simon VK1AUS and Phil VK1ZPL. Our WICEN team's hand-held had a flat battery and could only be used in the car. They then took around 10 minutes with borrowed gear to locate the device, again by tripping over it.

"Jack VK1JA and Richard VK1ZW, individually arrived next and wandered the forest and field for another 10 minutes before finding the fox. Finally, John VK1ET and Dave VK1DC, who both started late, arrived from different directions. Unfortunately, the fox was now visible and was quickly located.

"The final hound never showed up - Tom VK1TS is out there somewhere! We arrived back at the Lab around 8.30 pm.

"To all those who participated, thanks for showing up. Fox Hunts will continue on Thursday evenings for the rest of January and may continue into February also. The next Fox will be Laeli VK2LO"

AGM

A final reminder that our AGM will be held during this month's meeting. If you would like to assist with the running of the Division by participating in the committee, please consider nominating for a position. In any case, your presence at the AGM would be appreciated to ensure we have a quorum and, besides, it's nice to catch up for a chat, too!

Hugh Blemings VK1YYZ

VK2 Notes

Quiet Start to the New Year

I can only report that it has been a quiet start to the year, thus a shorter than usual VK2 Notes this month. I trust that, after the holiday season and getting back to work, everything is going as planned. There is much to do in continuance of some of the projects and policies that were started last year and which are of particular importance to the hobby of amateur radio and its future.

1998 Annual General Meeting

The date set for the AGM is 18 April 1998 at Amateur Radio House, Parramatta. It will commence at 11 am. Nominations for Council and Motions on Notice are to be lodged no later than 12 noon on 7 March 1998. Late lodgements will not be accepted. Council nomination forms are available from the divisional office at Parramatta.

Central Coast Field Day

The VK2 Division will be attending the Central Coast Field Day at the Wyong Racecourse with a bookstall and deceased-estates stall. This would also be an ideal opportunity for you to catch up and have a chat with those Councillors of the Division who will be attending. It is anticipated that there will be a good roll up of Councillors at the event on the day.

Membership Renewals

Just a reminder that all VK2 WIA membership renewals are being processed through the Divisional Office at Parramatta. Anyone who has received a renewal notice, but has not yet responded, should forward the notice, along with your fee, to the VK2 Divisional office of the Wireless Institute at PO Box 1066, Parramatta NSW 2124. Do not send it to the Federal Office.

Correspondence Course

The VK2 Novice Correspondence Course is now available. For more information contact the Parramatta Office. It is a great way to achieve a positive result and gain your amateur radio callsign. There will shortly be a bridging course to take you to the AOC (full-call).

Next Council Meeting

The first meeting of the VK2 Councillors for 1998 will take place on Friday, 13 February at Amateur Radio House at Parramatta, commencing at 7.00 pm. As is normally the case, this will be an 'open' meeting with all members invited to attend.

For more information, contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor, just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page at the back of this magazine. If you are addressing e-mail to the office, please do so at vk2wi@ozemail.com.au. There'll be more to report next month, but if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777, or by e-mail to dthom@penrithcity.nsw.gov.au

David Thompson VK2NH

VK5 and VK8 Notes

Greetings to all readers for 1998. I trust that this will be a good year for you.

I do apologise for the lack of notes in the January issue; however, with pressures of the season and other matters, the earlier deadline date slipped by me. I will try to do better in future.

In the South Australian Division "Journal" I have made comments regarding agenda items for the forthcoming Federal Convention to be held in March. I have also commented on the matter of nominations for the Divisional Council and the election to be held in conjunction with the Annual General Meeting in April. I hope that all VK5 Division members will take special note of this material.

Well, we finished the year off in fine fashion with the interesting exercise of obtaining a special reciprocal licence for Dr Andrew Thomas, who is Adelaide born, and the final astronaut selected to join the Russian cosmonauts on the MIR Space Station. I had the privilege of meeting with him here in Adelaide and found him to be a particularly pleasant gentleman. He expressed his pleasure at our actions and indicated his anticipation at being able to contact Australian amateur radio operators whilst on his coming mission.

Federal Convention

The VK5 Division will be looking at several proposed agenda items in the weeks leading up to the Federal Convention in March. It had been regular procedure in the past for details of agenda items from all Divisions to be promulgated in *Amateur Radio* magazine prior to Federal Conventions to allow members the opportunity of considering their content and subsequently providing their opinions to their Divisions as to how the items should be handled (ie voting for or against, or modifying). I feel that it is a shame this does not seem to occur at present and it may well be symptomatic of one of the reasons why there has been a general fall off in membership of the WIA (ie due to an apparent lack of interest or consultation with members on the part of WIA officers).

Within the VK5 Division Council there has been a move to try and counteract this situation. You may have noticed some aspects of this over the last nine months or so. To this end I provide here some brief comment and ideas as to possible agenda items which members will be asked to consider for proposal by the VK5 Division.

One of these deals with the matter of representation by the WIA at Federal level to the various Government authorities. It would certainly seem that this is far from ideal. The feeling exists that there are times when the WIA should go straight to the top as many other organisations do and approach the Minister directly. Many advantages can come from this method of working. We need to discuss and come up with a firm method determining how we can deal in this way. Very often it is more expedient to deal with

policy matters at higher level and utilise our connections with the bureaucracy at the working level to deal with technical aspects and the like.

Another item I would place before you is the matter of a clause contained in the Articles of Association of the Federal body of the WIA. If this is symptomatic of the way in which we would work I fear greatly for our existence. The particular clause is No 100 and deals with matters concerning dismissal of members of the Publications Committee in connection with our national magazine *Amateur Radio*. Would you believe that this says, in part: "*it shall not be necessary for the Council or the Executive to give any reason for so dismissing any member of the Publications Committee, including the Editor.*"

I merely ask, "just how 'un-Australian' can you get?" and leave you to make up your mind as to what you think about such wording.

The VK5 Division also has an existing Federal Agenda item dealing with a move to encourage the inclusion of amateur radio within schools as a subject.

Yet another matter that has been attracting a lot of interest on the Packet Radio Network is "advertising of personal amateur radio equipment on air." Presently the regulations and comment on this matter by the ACA preclude this happening. It is thought the original intent that amateur radio should not be allowed to be used in any "commercial" way may have become distorted within the existing frame-work of the regulations. There is potential for a case to be made to have the regulations updated and liberalised to allow a more enlightened and reasonable approach to this issue.

Concern has been expressed regarding the erosion of frequency allocations in the VHF/UHF/Microwave portions of the spectrum. It would appear that within the relevant bands no "exclusive" amateur radio allocations exist. This situation certainly needs to be addressed.

These are just some of the items which are up for discussion within the VK5 Division. This information is provided so that VK5 members who cannot attend meetings, as well as those in other States, may be aware of the nature of business being addressed within the VK5 Division.

Without information of this kind, how can any member possibly become aware and knowledgeable regarding what is going on? This approach will, I hope, lead to members taking a more active part in letting their representatives know what "THEY", the members, want of our organisation.

Within VK5

Recent appointments within the Divisional Council saw action taken regarding our representatives to the Federal body. Ian Watson VK5KIA has been appointed as Federal Councillor and David Burnett VK5AXW as Alternate Federal Councillor.

Other matters concerning the Division include our occupancy of the Burley Griffin Building (see February *Journal*), Clubs' Conventions, Country Member Liaison, Divisional Broadcasts, Constitution Review, distribution of Minutes of Meetings etc. etc. There is a great deal of work to be done and a need for people who are prepared to help do that work.

Ian Hunt VK5QX

VK6 Notes

WARG February Meeting

Please note that the next meeting of the West Australian Repeater Group will be held on Monday, 2 February at a new venue, the recently completed RSL Hall at the corner of Ramsden Road and Playfield Street, East Victoria Park, commencing at 7.30 pm. Please mark the next meeting down in your diaries: 2 March, QTH to be advised via the WIA news.

VK6RCT Cataby

This repeater was recently remotely shut down due to false triggering by an unknown cause. The triggering was causing unnecessary battery drain as well as tying up the rest of the linked repeater system. The repeater was returned to service on Sunday, 4 January and appears to be behaving normally. If further false triggering occurs it will be necessary to shut down the repeater until a site visit can be made to investigate the problem.

Mast and Site Safety Issues

A special meeting of the WARG committee was held on Monday, 5 January to discuss safety issues and possible legal liabilities associated with access to and maintenance of our repeater equipment, especially with regard to the climbing of masts and towers. The committee is concerned that, where the Group has equipment that uses or shares commercial masts and/or sites, access is becoming increasingly hidebound by regulations promulgated under the Mines Act and/or Worksafe WA.

In effect, when we enter these sites we do so as sub-contractors and must obey the regulations fully, including the appointment of a Safety Officer. Each individual must wear approved Personal Protection Equipment such as hard-hat, safety boots,

safety spectacles, and high visibility jacket. To illustrate the problem, VK6RTH and VK6RMW are both located on commercial mine sites; VK6RMS, RAW, and RAP/RUF/BBR use commercial masts on commercial sites; and VK6RAV, RCT, and RBN use WARG-owned masts located on land owned by a third party. VK6RLM and VK6RFM are both located at private amateur QTHs using the amateur's own mast or tower.

The committee is concerned that any failure to observe fully the appropriate regulations could nullify our WIA Public Liability and Accident/Sickness insurance cover, as well as expose the Group to possible legal action.

Steps are being taken by the committee to conform with the regulations where commercial interests are involved, and clarification is being sought as to our position where sites owned by third parties are used.

In a nutshell, the ever-increasing regulation of sites, together with the serious consequences of a mishap, pose difficult questions for the continued viability of much of our repeater network, and for amateur repeaters everywhere commercial sites are used.

Further discussion with the WIA committee will take place shortly and more information will be published as the situation becomes clearer.

ARNEWSLINE

For some weeks now, Will VK6UU has been downloading this excellent Amateur Radio News Service (which originates in Arcadia, California) via the Internet and then relaying it on air via WARG's repeater network. Except for the two weeks over Christmas, when the relay was made at 0930 on Sundays 28 December and 4 January in place of the usual WIA Divisional broadcast, this news service has been available at 10.15 am on repeater Channel 6750 immediately prior to WARG's Technical and General Net.

Some discussion is currently taking place as to the optimum time-slot each Sunday, but meanwhile ARNEWSLINE can be heard at 1015 hrs on Ch 6750. (*I am indebted to Clive VK6CSW for the provision of the above items.*)

HamWeb - Broadcast Mode Packet Radio

Recently I purchased the conference notes of the ARRL/TAPR Digital Communications Conference, October '97. In them, John Hansen WA0PTV describes a set of software which makes use of the potential broadcast nature of amateur packet radio, to allow "the transfer of files and entire directory structures from a server to many client stations simultaneously".

So what use is that? Consider an audio broadcast, such as the WIA news, or even the ARNEWSLINE program. The audio can be vocoded at a rate of 16 kbps, using an algorithm such as RealAudio (RA) uses. This forms a fairly large binary file; the 20 minute WIA news would become about 2.4 MegaBytes (a lower vocoding rate would drop the file size, but at the expense of a drop in voice quality).

Have you ever missed the WIA news, simply because the set broadcast times didn't fit your family, work and social commitments? I certainly have. Years ago we were looking at recording it on tape, and allowing amateurs to remotely retrieve the broadcast via DTMF; but then we ran into regulatory problems, and the idea was dropped.

Well, instead we can digitise the news broadcast, and have it delivered as a 'background task' via packet radio. When we want to hear the WIA news broadcast, we simply click on our local Web Browser, and the audio appears on our PC speakers! The news can be listened to at the end-users convenience, even if that is 3.00 am on a Tuesday morning. How long would it take to download from the central server to an end user? (Does it matter? It all happens in the background anyway).

Roughly speaking, a 2.4 Mb file would take about six hours to download at 1200 bps duplex; obviously 9600 bps would be nicer, but is not necessary, especially if the WIA news in RA format is 'released' for digital broadcast at 4.00 am on a Sunday morning (using a batch process, not manually of course!).

End users would then have the news available from 10.00 am onwards. The important thing to note is that multiple stations will have received this information simultaneously, with individual stations only having to request the occasional block they missed. Is anyone interested in making use of such a facility? Please let me (VK6KCH) know. The software is available from TAPR, at either <http://www.tapr.org/~wa0ptv> or <ftp://ftp.tapr.org/pub/wa0ptv>

Contact Information

Chris Lowe VK6BIK via chrismor@avon.net.au or PO Box 838, Toodyay WA 6566 or 08 9574 4060. Chris Hill VK6KCH via vk6kch@amsat.org or packet VK6KCH@VK6BBR.#PER.#WA.AUS.OC
Chris Hill VK6KCH

"QRM" News from the Tasmanian Division

Branch Meetings

This month sees all Branches holding their Annual General Meetings. All

positions will be declared vacant and nominations will be called for. I believe that several office bearers have indicated their desire to stand down.

Meetings will be held as follows: Southern Branch on Wednesday, 4 February at 2000 hours at the Domain Activity Centre, Hobart; North-western Branch on Tuesday, 10 February at 1945 hours at the High School, Dial Road, Penguin; and Northern Branch on Wednesday, 11 February at 1930 at the Alanvale campus of Tasmanian TAFE (they should be meeting in the usual room 14 of "Block" C but, as you may be aware, TAFE in this state has been re-organised into five separate sections, hence there is considerable confusion as to what goes where, so listen for the confirmation of the actual meeting room over VK7WI).

Divisional AGM

The Divisional Annual General Meeting will be held at the northern campus of the University of Tasmania on Saturday, 21 March at 1400 hours. Further details of the location will be in next months' column. Nominations are now open for eight positions on Council, and close 21 days prior to that date with the Divisional Secretary at PO Box 271, Riverside TAS 7250. Notices of Motion must be lodged by 21 February, also to the Divisional Secretary.

In the evening the Northern Branch will be hosting a buffet meal at the University cafeteria from 7.30 p.m. The idea is to pay for what you want. Also, I believe a band has been booked, there will be a lucky door prize, and Divisional Council is hoping to obtain a prominent guest speaker.

Please pencil in the date of the Divisional AGM now and inform the Northern Branch secretary at PO Box 275, Launceston TAS 7250 by 1 March. This will help catering arrangements. See you there!

Social Get-together

The Northern Branch held their annual Social Get-together at the home of Paul VK7KPG in Scamander. There were 20 hams in attendance plus nine others. Especially pleasing was the attendance of VK2YR who read about it through this column whilst travelling down in the plane the day before.

The weather this year was different from 1997, being overcast yet very humid, so your correspondent was not sunburnt nor attacked by 'mozzies'. Pleasing, too, was the participation of hams from other regions of the state, who gravitate to the east coast in the summer months. Yes, we will definitely be back in 1999. Mark it down now to come along and join us then!

Robin L Harwood VK7RH
ar

News

Club News

North East Radio Group (NERG)

The North East Radio Group will be conducting Novice classes, starting 3 March 1998 at 7.30 pm. The venue will be the St Helena Secondary College, Wallowa Road, St Helena. Look for the fourth portable class room from the car park exit.

The cost will be \$100, which includes Club membership fee, Morse tapes and trial examinations.

Course enquiries should be made to Dave Pricor VK3JMB on 03 9465 9708.

The NERG also meets monthly on the second Thursday of each month at 8 pm at the same venue. Anyone wishing to attend is most welcome.

Dave Pricor VK3JMB

Radio Amateurs Old Timers Club (WA)

Wedding of George Moss VK6GM and Betty Ball

On Sunday, 2 November 1997, George VK6GM and his YL Betty, tied the matrimonial knot at a private ceremony held at the home of Betty's daughter.

Members of Betty and George's families and friends were present to witness the ceremony which was conducted very tastefully by Celebrant Olga Wignall.

Several RAOTC members and wives were also invited and George's son Ray Moss was MC.

Immediately following the ceremony and the signing of documents, Betty Moss was presented with a brand new RAOTC badge which read: "Betty Moss - Radio Amateurs Old Timers Club - XYL VK6GM".

George and Betty had announced their engagement on George's 94th birthday in September 1997 but they have been together for 17 years. Betty, aged 79, has been a long time wildflower enthusiast and photographer and George, of course, has been associated with radio communications and amateur radio for more than 70 years.

Following the ceremony a delightful buffet meal was offered to the wedding party and guests and this, suitably accompanied by copious amounts of champagne and other drinks enabled those gathered to respond in a suitable manner to Ray Moss' toasts to the happy couple.

We all wish George and Betty many more happy years together, good DX and, hopefully, many packet messages to them via George's packet address which is: VK6GM@VKGZSE.#PER.#WA.AUS.OC

RAOTC members here will no doubt continue the toasts to Betty and George at the next get-together at the Bayswater Tavern.

After an article and photo appeared in the *West Australian* newspaper in relation to George and Betty's wedding, George received phone calls and cards from many of his former students, many of them now successful businessmen, recalling fond memories of George's days as lecturer at the (then) WA Institute of Technology (now Curtin University), and his gentle persuasion to academic excellence.

Ray Peterson VKGPW

Radio Amateurs Old Timers Club (RAOTC)

AGM

The annual general meeting and luncheon will be held on Tuesday, 10 March at the Bentleigh Club commencing at 1 pm. The cost has not yet been determined, but is expected to be about \$25 a head.

The guest speaker will be Mr Mike Hassett, Communications Engineer at the head office of the Bureau of Meteorology.



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George Moss VK6GM and XYL Betty.

Members of any radio club are welcome to attend, but bookings are essential. Please book with Arthur Evans VK3VQ, QTHR.

Signals Museum

An Army Signals Museum was established at Simpson Barracks in Watsonia some years ago. In recent times it was allocated a separate building which now houses an interesting collection of Army Signals material.

On Friday, 14 November 1997 there was a brief ceremony when the Museum was declared open. The official opening ceremony was performed by Brigadier Mike Swan who is currently Director General of Information, Policy and Plans, Department of Army. The Museum is directed by Lieutenant Colonel Ken Munroe, assisted by Major Mary Reid and a growing group of volunteers.

From now on it will be open 10 am to 4 pm on Tuesdays and 1 pm to 4 pm on Sundays. Hopefully, it will also be open on Thursdays in 1998.

Items the Museum would like to obtain include: the Army version of the Kingsley AR7; and transmitters or receivers of the Ack set and Cork set which were used from the 1920s to 1939 when they were replaced by the Number 1 set and Number 2 set. If any members or friends can help, please contact Harry Mauger VK3KAE, or Allan Doble VK3AMD. We are both QTHR.

The Signals Museum is located at Molloy Road within Simpson Barracks, Watsonia, North East of Melbourne, Melways Map Reference 20 G 7. The telephone number is 03 9450 7379.

Allan Doble VK3AMD

Waverley Amateur Radio Society (WARS)

The Society has now completed three years at its premises in the Scout Hall at Vickery Avenue, Rose Bay, in the eastern suburbs of Sydney, and has a small but enthusiastic membership. We are, however, looking to increasing our numbers in 1998.

Regular meetings are held on the third Wednesday evening of every month and a Project day on the first Saturday afternoon. Details are included in the WIA Sunday broadcasts. In addition, we run Morse and theory classes, and examinations, once or twice a year. Other events are organised from time to time.

The huge annual US Hamvention at Dayton, Ohio in May each year must be known to many of you. A number of our members are planning a group trip for May 1999 and would be interested to hear from any VKs who might be interested in joining us.



A certificate of attendance will be given to each person attending the 50th Urunga Radio Convention on 11 April 1998.

If you are thinking of going, joining our group will give us more clout in negotiating attractive travel deals and you will be in the company of other VKs for the period of the show.

Most of our group will be treating this as the first part of a trip to other overseas destinations. If you would like further details, please contact Raffy Shammay VK2RF, on 02 9389 9188 (BH) or 02 9130 5128 or by e-mail to shammay@zip.com.au.

Being centrally located in Sydney, we try to provide a contact point for visiting hams from overseas or elsewhere in VK. Visitors are welcome to give a call on the Paddington repeater (147.025 MHz) when in town, as members usually monitor this frequency.

Our Internet Web pages have just been completely revised with the primary aim of providing information for hams visiting Sydney and readers are invited to access them at <http://www.zip.com.au/~sb/wars/wars1.htm>

We can be contacted by e-mail at sb@zip.com.au or by post to our recently changed address at: PO Box 581, Vaucluse NSW 2030.

Simon Buxton VK2EII

Wagga Amateur Radio Club Wagga Amateur Radio Club 500th Net

On 27 January, the Wagga Amateur Radio Club Inc celebrated its 500th club net on 80 metres.

Club members will be active each night of February between 0930 and 1030z on 3.605 MHz +/- QRM for any operator to work VK2WG; or for any SWL who hears the station calling, and the club station, to apply

for the certificate. The closing date for claims will be 31 March 1998. By then we should have a good idea of the number of certificates to issue.

The cost of the certificate will be \$5 and all applications are to be sent to the Awards Manager, PO Box 304, Junee 2663 NSW.

I do apologise for the short notice, but the closing date for January *Amateur Radio* came up too quickly. I wish to take this opportunity to thank all those who have supported the WARC Tuesday night 80 metre net, for without them we would never have reached this milestone in our club history.

Paul VK2KVV
Awards Manager

50th Urunga Radio Convention

The 50th Urunga Radio Convention will be held at Urunga on the Easter weekend, commencing at 9.00 am on 11 April 1998. This convention is the first and longest running radio convention in Australia.

The first convention was held at the DO-ME boat shed, between the traffic and railway bridges at Urunga, during Easter 1949.

The first President/Organiser was Crieff Retallick VK2XO, and the Secretary was Peter Alexander VK2PA. From this date the stage was set for the first Amateur Radio Convention in Australia. The organisers had no idea at this first convention that their small get-together would survive for 50 years!

See you at Urunga 1998!

B J Slarke VK2ZCQ
ar

Transmitters

SSB by the Fourth Method?

Phil Rice VK3BHR
Lot 601K Durston's Road
Maiden Gully VIC 3551

Introduction

This article describes a phasing exciter which is easy to get going, offers excellent performance and has only three adjustments, all for carrier nulling. The exciter uses a digital counter to generate the 90 degree RF phase shift, a "sequence network" (Fig 4) to produce the 90 degree audio phase shifts, and a quad analogue switch to perform the modulation. The exciter produces clean SSB at frequencies up to 3.7 MHz, using easily obtainable parts.

How it Works

The exciter uses a variation on the phasing method of generating SSB. Four equal amplitude audio sources of relative phase 0, 90, 180 and 270 degrees, are sequentially selected by an analogue switch. Each source is connected through to the output for a quarter of an RF cycle. The sequence repeats at the carrier frequency, producing SSB. There is, in theory, no carrier and no opposite sideband in the output and the nearest unwanted output is at three times the carrier frequency.

Why it Works

The four phase audio source can be treated as two push-pull sources, differing in phase by 90 degrees.

When one source is sampled, taking alternative samples of the "push" and "pull" signals, a series of double sidebands (DSB) signals results. The first DSB signal is centred on the sampling frequency and the others are at odd multiples.

Similarly, sampling the other (quadrature) audio source produces another series of DSB signals. Providing the two sampling signals are a quarter of a RF cycle out of step, adding the two DSB signals produces SSB exactly as in the phasing method.

In theory, a family of SSB signals will be all that is produced. The first will be at the sampling frequency, the next at three times the sampling frequency, then five times, etc. There will be no carrier, no baseband, no unwanted sidebands and nothing at even multiples of the sampling frequency.

In practice, clean SSB is produced at the sampling frequency. The third order distortion products, carrier and unwanted sideband are all more than 50 dB below PEP. There appears to be no other "rubbish" near the wanted SSB signal. The nearest unwanted signal is at twice the sampling frequency.

Circuit Description

Audio from a dynamic microphone is first amplified by one quarter of a TL074 connected as a compressor. The audio is then bandpass filtered to restrict the range of frequencies to those handled by the "sequence network". The output from the "sequence network" is buffered by another TL074 with offset voltage adjustments provided on three of the op-amps so that all four audio stages can be "aligned" to minimise the resultant carrier. The outputs from the op-amps are RC filtered to present a low RF impedance to the 4066 analogue switch and to avoid upsetting the TL074.

The VFO signal, at four times the final carrier frequency, is amplified by two sections of a 75LS00, biased in the linear region. The signal is gated by another section of the 74LS00 so that the clock signal to the counter may be disabled while allowing the VFO to run continuously for minimum drift.

The Johnson (ring) counter is clocked by this gated signal. The counter output is decoded by four AND gates to produce the four sampling signals. The use of the Johnson counter and symmetrical decoding gates is aimed at matching the switching times as closely

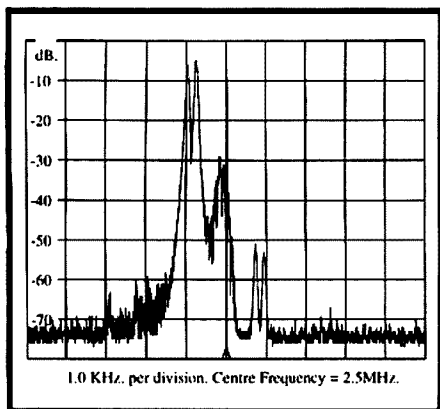


Fig 1 - Measured two-tone spectrum - carrier has not been nulled.

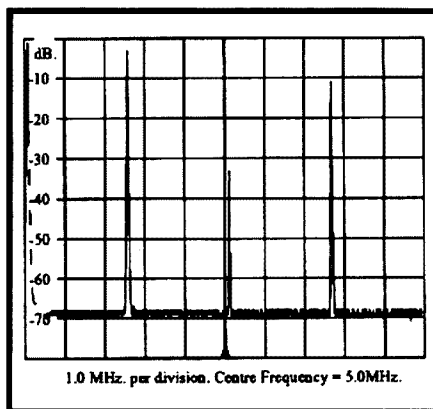


Fig 2 - Measured two-tone spectrum - wide band.

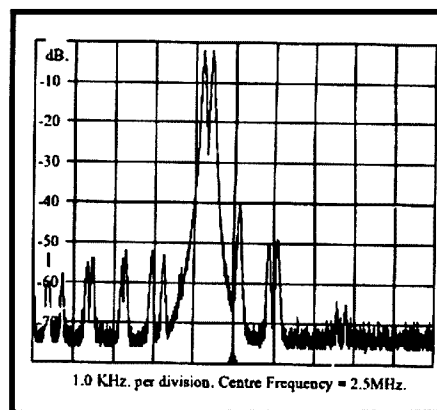


Fig 3 - Measured two-tone spectrum. Microphone compressor removed. Carrier is exaggerated for clarity - it would normally be 20 dB lower.

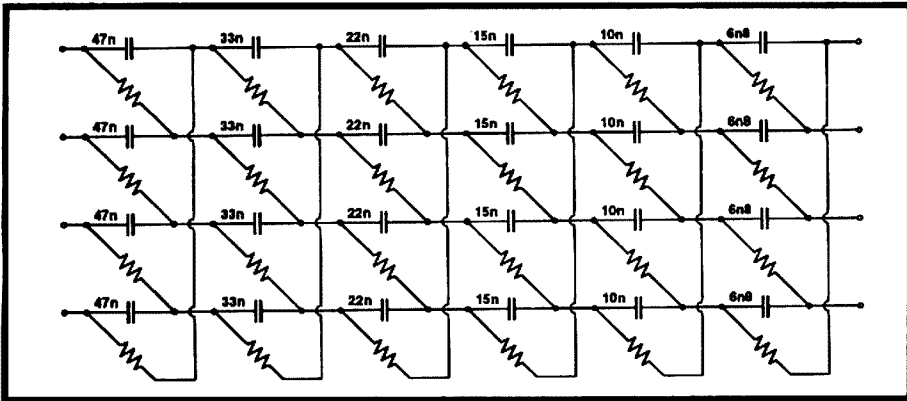


Fig 4 - Audio "sequence network".

as possible. The counter circuit could all be programmed into a PAL or similar to simplify this part of the hardware.

The 4066 analogue switch then sequentially selects, at the carrier rate, pieces of the four audio signals and presents them to the output buffer. A "roofing" filter (not included) is required to extract the desired DSB signal. A single tuned circuit or low pass filter would be sufficient.

Adjustment

Here is the easy part. First, with no audio input and using a multimeter, adjust the DC outputs of three of the buffer amplifiers to match the fourth one. The SSB exciter must be switched to SSB (not AM). It doesn't matter which sideband is selected.

Then tune a receiver to the output frequency (one quarter of the VFO frequency), switch to SSB and adjust all offset trim pots for minimum carrier (again with no audio input) Repeat a couple of times to get minimum carrier.

Performance

Figures 1 and 2 show the spectrum of the SSB generator output with a two-tone input signal.

The narrow-band spectrum, Fig 1, shows the worst distortion products more than 50 dB below the PEP level of the desired output (PEP is 6 dB above the level of one of the tones).

The wide-band spectrum, Fig 2, shows no undesired signals (to 80 dB below PEP) near the wanted output. The nearest rubbish is twice the frequency of the desired output.

Fig 3 shows the performance of the switching modulator with a clean audio source. The carrier has not been nulled (to make it easier to see); it would normally be 20 dB lower.

What If It Doesn't Work?

If you used the PC layout, Figs 5 and 6, then fault finding is easier.

1. Check that the DC voltage levels at the op-amp outputs match those shown on the circuit diagram (figures in brackets). Minor deviations, say plus or minus half a volt, are OK. The four buffer amplifier outputs (the one that drive the analogue switches) should be within a milli-volt of one another.

2. Check that the four digital inputs to the analogue switch are active. These should be selected sequentially, one per cycle of the VFO. You could try replacing the VFO by a very low frequency (audio) oscillator and use a logic probe to check activity.

3. Check the four audio inputs to the analogue switch. They should be the same amplitude, about 330 mV pp. If not, check the push-pull driver op-amps. The outputs here should be equal amplitudes too, about 1.25 V pp. If you have access to a dual trace CRO, check for 90 degree phase shift between adjacent audio signals at the input to the 4066 analogue switch.

4. If both the preceding checks are

OK, the 4066 is probably faulty. With no audio input, check the DC level at the output from the analogue switch. Then connect the output to earth via a 1 k resistor. If the 4066 is OK you shouldn't see change in the DC voltage. The voltage should be within 20 mV of the output of the wipers of the offset voltage trim-pots (somewhere near 5.9 volts).

If you have made your own printed

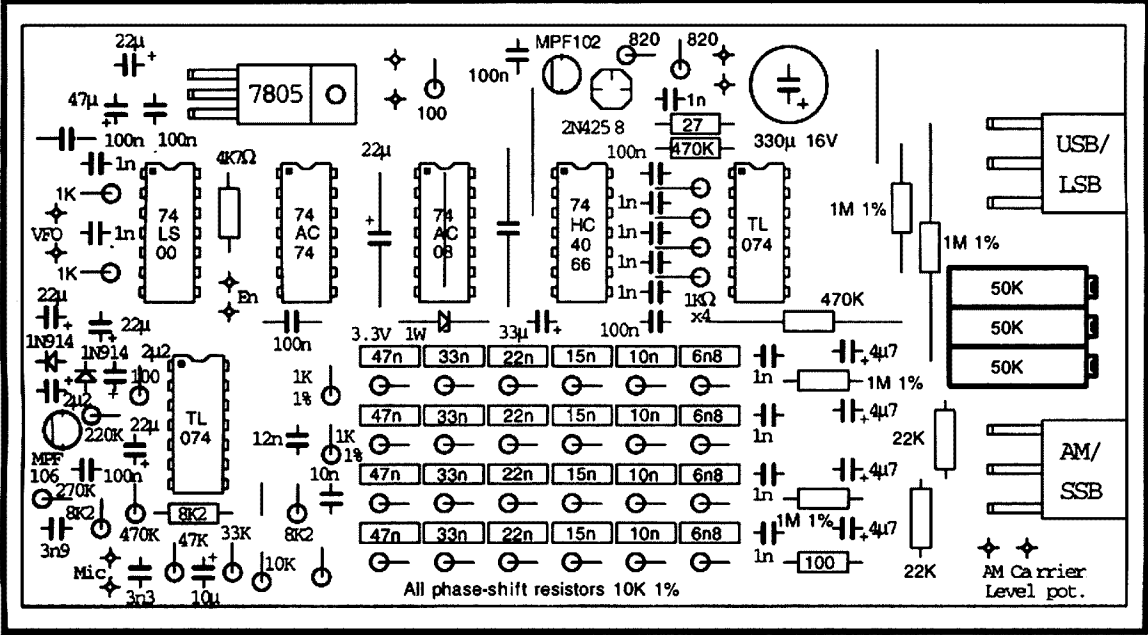


Fig 5 - PC board component overlay.

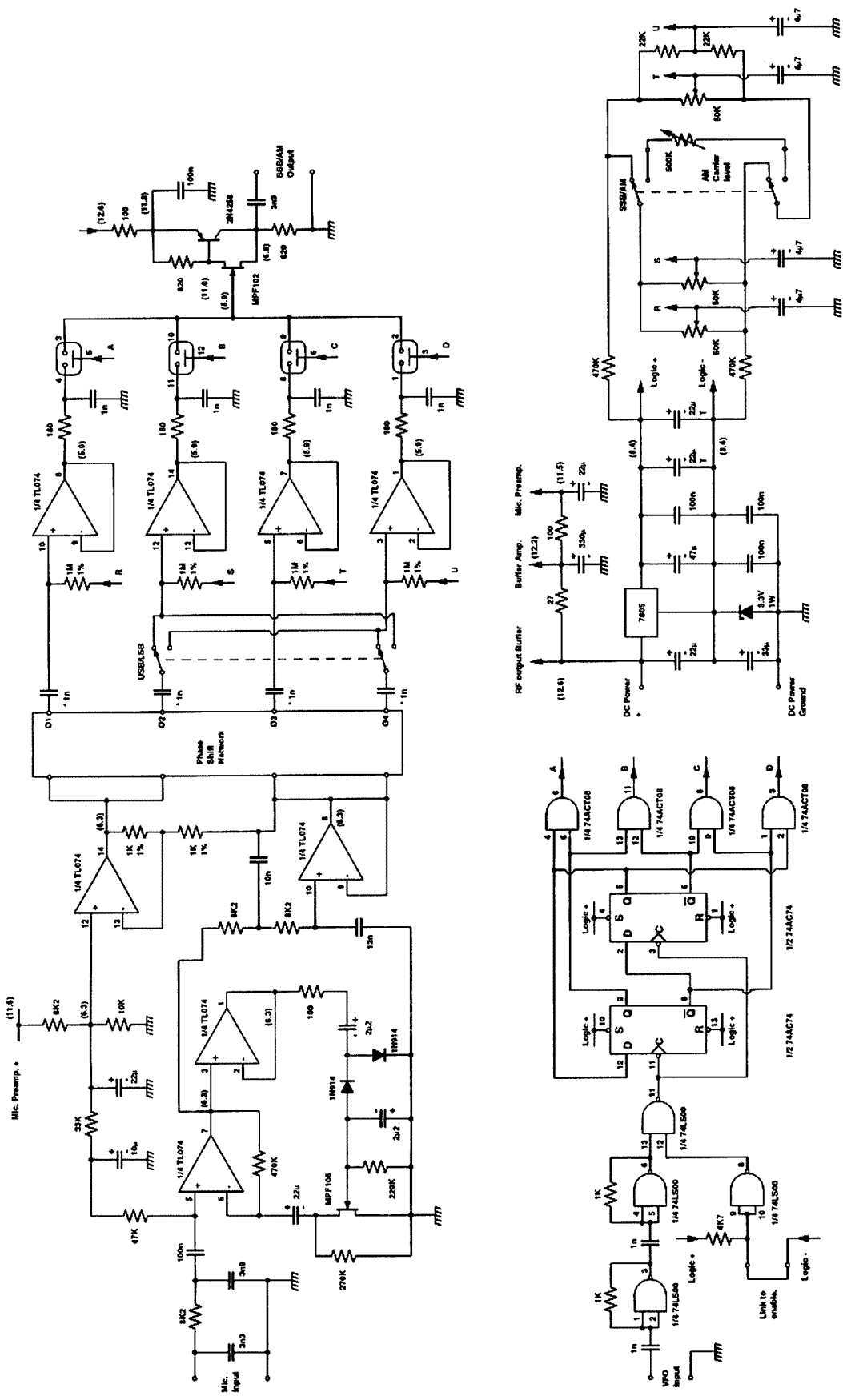


Fig 7 - Circuit diagram of the fourth method phasing exciter. (Drawn by Phil VK3BHR)

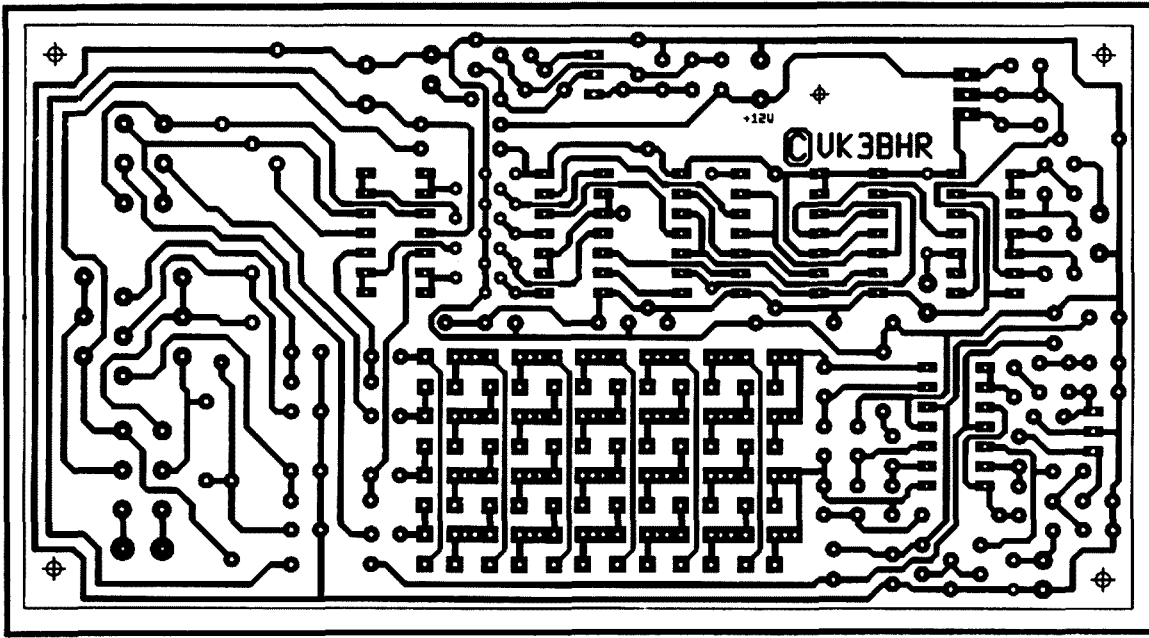


Fig 6 - PC board copper side.

circuit board, or otherwise lashed the SSB generator together, then check carefully that you have followed the circuit diagram (I hope that I have drawn it correctly). The circuit is critically dependent on the four digital signals and the four audio signals arriving at the 4066 in the correct sequence! If the wiring is correct, you should get perfect SSB. If the wiring is wrong, you get perfect rubbish.

Direct Conversion SSB Receiver?

This switching modulator should be capable of acting as a demodulator. This would require reversing the direction of signal flow through the circuit. The problems expected in doing this are, firstly, the attenuation through the sequence network would prevent reception of milli-volt signals, and secondly, to obtain 40 dB of opposite sideband suppression, the signal level through the analogue switch would have to be held below 0.05 V pp. This would result in poor dynamic range. This may be acceptable if the demodulator is used at the output of an AGC controlled IF amplifier.

Parts

Semiconductor List

TL074	2
7805	1

74LS00	1
74AC74	1
74ACT08	1
74HC4066	1

The op-amps are all TL074s. Please don't use LM324s as substitutes for the LM0784s. LM324s usually have bad crossover distortion, lower gain and more noise than the TL074. All of which degrade performance.

For most of the digital ICs, use the fastest CMOS types you can get. At a pinch, LS series devices will work fine, but will limit the upper RF frequency a bit (and degrade the carrier suppression too). The one exception is the 74LS00. Fast CMOS '00s sometimes consume a heap of supply current when biased into their linear region or oscillate uncontrollably: avoid using them in the VFO amplifier.

The capacitors in the sequence network should ideally be matched in groups. This matching influences the opposite sideband rejection. Matching between groups is not so important. The 1 nF capacitors at the output of the sequence network should also be matched as these will influence the opposite sideband rejection at lower frequencies.

Conclusion

The SSB generator presented is easy to get going and produces clean SSB up

to 3.7 MHz. Only common parts are used.

On the negative side, the circuit is rather complicated and the upper SSB frequency is limited to about 7 MHz.

The same switching modulator should be useable as a direct conversion receiver by reversing the direction of signal flow through the RF and audio sections.

References

1. J R Hey G3TDZ, "Simple SSB Generator", *Electronics Today*, August 1979, pp 48-51.
2. J D K West - COMSIG 1991 Proceedings. South African Symposium on Communications and Signal Processing, published by IEEE, New York, USA.
3. M J Gingell, "Single Sideband Modulation Using Sequence Asymmetric Polyphase Networks", *Electrical Communications*, Vol 48, No 1-2 1973, pp 21-25.

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WIA News

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of December 1997:

L21067	MR R PRICE
L21068	MR J WRIGHT
L21069	MR J T CHRISTOPHER
L60392	MR I J K LANCASTER
L60393	MR P D SOMES
VK2ADU	MR F R JOHNSTON
VK2APA	MR A T PUNCH
VK2AVY	CAPT G A TROTTER
VK2IBT	MR K R STANDEN
VK2JW	MR J WALKER
VK2MT	MR R C MCKNIGHT
VK2ZE	MR L J DAIVISON
VK3HL	MR H P TRUTMANN
VK7SM	MR J W DUGGAN

Test Equipment

A Simple Transmission Monitor and Interference Sniffer

Drew Diamond VK3XU
45 Gatters Rd.
Wonga Park VIC 3115

By regulation, we are required to ensure that the signals we put to air are of a sufficiently high technical standard so as not to annoy other users of the spectrum. Also, we maintain best chance of good copy at the receive end, especially under rough conditions, if we always strive for a good-quality signal.

To that end, an SSB signal shall not have excessive splatter, hum, noise, FM, and the transmitted voice should be undistorted. Similarly, digital modes should be without excessive clicks, chirp, hum or ripple, noise and thumps, and CW Morse should not be too "soft" nor too "hard". Yet, strangely, some amateurs seem reluctant to report transmission faults to offending stations, perhaps for fear of getting into

an argument, or causing ill-feeling ("no QSL for him - he gave me a T8!").

To get a true idea of our transmission quality, the best approach is to monitor right there in the shack, and immediately determine our signal characteristics, without having to rely on (perhaps inaccurate) reports from other stations. A spare receiver may give a pretty good idea, but sometimes the local signal simply cannot be reduced far enough in level to get a true picture. Whatever is done, the signal is just too strong, which overloads the receiver and causes various distortions. And if no spare receiver; what to do?

Here's a handy gadget for checking transmission quality. The input is untuned, so that 3.5, 7, 14, 18, 21, 24 and

28 MHz SSB and digital modes (including Morse, RTTY and packet) may be directly monitored. Sensitivity is such that a one microvolt signal on 3.5 MHz is easily detected and, on 28 MHz, a 10 microvolt signal may be heard, so monitoring a local QRP signal is not a problem. Additionally, the device may be used as an effective sniffer of interference sources around the home (see Operation below).

Circuit

A ubiquitous NE602 balanced mixer chip is configured as a product detector to form a simple direct-conversion receiver. The internal oscillator tunes from about 3.5 to 4 MHz with the component values shown. The input is untuned, so that all HF signals are presented to the input of the '602. Harmonics of the oscillator permit reception of signals to at least 32 MHz.

The product-detected signal developed at pins 4 and 5 of the '602 is applied to a conventional LM386 audio chip which is wired to provide maximum audio gain. The sensitivity of the combination is remarkable, in that a 3.5 MHz signal of less than one microvolt is easily perceived, with decreasing sensitivity as the order of signal frequency is raised. However, even at 28 MHz, sensitivity is still good at about 10 microvolts.

Sensitivity is controlled by

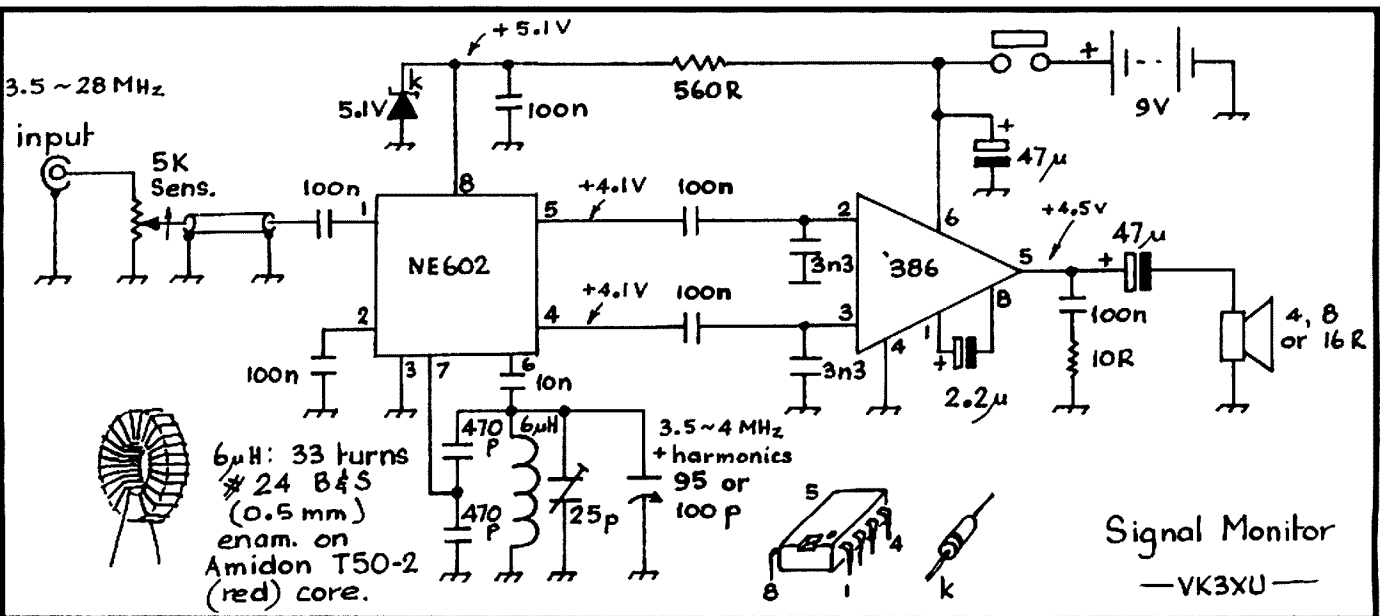
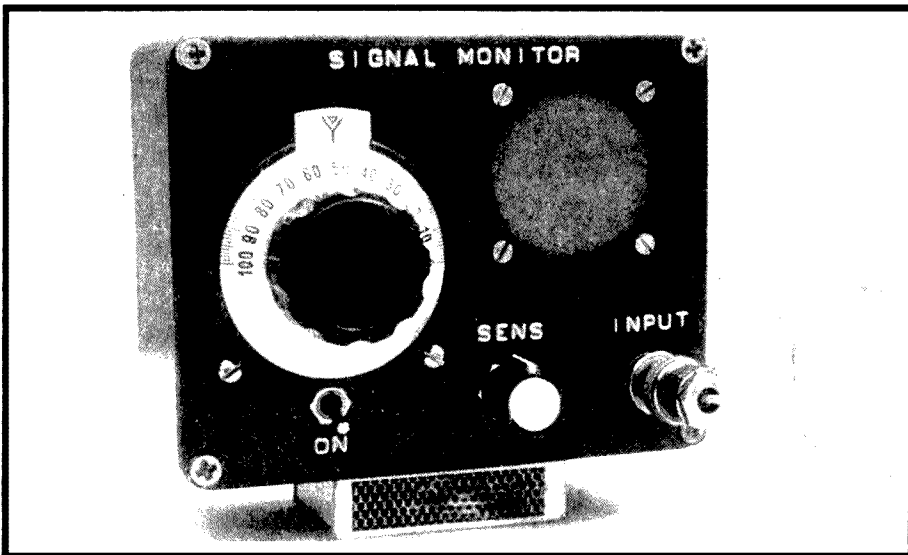


Fig 1 - Schematic of the signal monitor. (Drawn by Drew VK3XU)



The Simple Transmission Monitor and Interference Sniffer.

adjustment of the 5 kilohm potentiometer right at the front end, so that large signals may be effectively reduced to a more appropriate level as necessary.

Current drain from the 9 V battery is about 10 mA.

Construction

To prevent uncontrolled entry of RF energy, and suppress radiation from the local oscillator (which is on your signal frequency, or "sub" harmonic thereof), the device must be housed in an all-metal box. Mine is built in a die-cast box

measuring 95 x 120 x 56 mm. An aluminium or double-sided PC board enclosure of similar size would also serve.

A "paddyboard" style PC board (Ref 3) accommodates the two chips and most passive components. A suggested layout is shown, although any favoured method should yield satisfactory results, provided that all components and wiring have reasonably short leads. To ease construction, use wire wrap sockets for the chips if desired.

The components attached to pins 6 and 7 of the '602 comprise the VFO (or

local oscillator) circuit, and all rules applying to oscillator construction must be observed for good frequency stability. The finished device is not going to be much good to you if the oscillator is excessively wobbly or drifts. The variable capacitor must be securely mounted, and connected to a reduction drive or vernier. Use 470 pF styroseal or dipped silver mica capacitors for the Colpitts feedback capacitors. Do not use mystery ceramics. The trim capacitor should be an air-spaced type, eg "beehive" or similar.

The six micro-henry oscillator coil should be mounted upon an insulating substrate. A small pad-board rectangle of PC board material is ideal. Cut a small land as described in Ref 3 for connection of the "hot side" of the coil and other tank components. On the remaining area of the pad, carefully peel some copper away to provide an insulated area upon which the coil may be super-glued.

If desired, include a headphone socket connection, wired to cut-off the speaker. However, it was found that headphone operation was not essential, even when checking SSB.

Operation

Before switch-on, check your wiring again, and that all polarised components are correctly oriented. Leave the works exposed for the moment. Connect the battery, and switch-on. There should be just a soft hiss audible from the speaker. Set the 100 pF variable capacitor for maximum C (plates fully meshed). Plug a clip lead or similar device into the antenna input of your station receiver, which is tuned to 3.495 MHz. Place the signal monitor near the clip lead. Now adjust the 25 pF trim capacitor so that the oscillator generates at about 3.495 MHz. Tune the station receiver to 4.0 MHz and check that the oscillator will function to at least that frequency.

For routine signal monitoring, an effective pick-up antenna may comprise a 40 mm diameter coil of three turns of hook-up or enamelled wire fitted to a coaxial plug. A plain piece of wire inserted into the connector provides a larger signal sample; but, for critical monitoring of transmission quality, the signal level is too greatly affected by

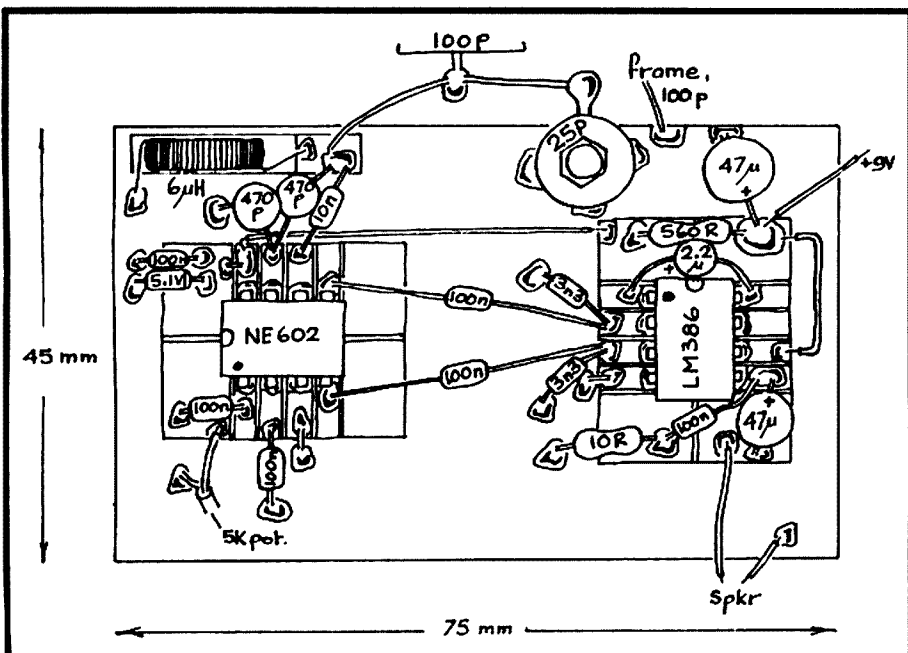
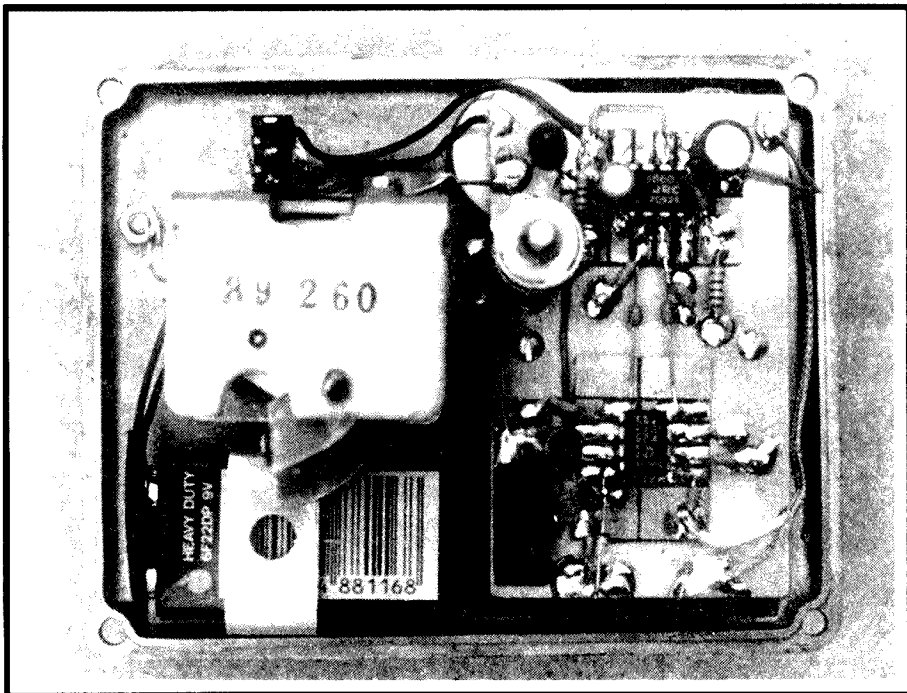


Fig 2 - Component board layout for the signal monitor.



Internal view of the Monitor.

body and hand capacity, whereas, by responding mainly to the magnetic (H) component of the field, the loop is largely immune to these undesirable effects.

In use, the monitor may be conveniently placed anywhere on the operating table. With the transmitter keyed on, tune in the signal. Adjust the sensitivity potentiometer for a signal level which does not overload the monitor. If the signal level into the monitor is too large, the oscillator will pull, and give a falsely poor sounding result. As you tune around your SSB signal, it should sound clean, without excessive hum, noise or splatter. Digital modes, Morse for instance, should sound clean, without excessive chirp, clicks, hum or ripple, or phase noise (as hiss, each side of the signal).

For signal or interference sniffing applications, use a plain wire pick-up at first, about 1 m long, plugged into the input. The wire may be draped over one shoulder. The interfering signal or noise is tuned in. Walk around the suspected area, looking for greatest signal strength, using the sensitivity control to reduce the level as you get closer to the source. If necessary, substitute the small loop as you close in on the source. The loop will allow you to identify the actual culprit, be it touch lamp, computer, TV

set, faulty thermostat, bug zapper, digital clock, appliance controller, or whatever. Use a larger one-turn loop, about 300 mm diameter, for greater signal sensitivity if required.

Parts

The NE602(AN) and Amidon core are presently available from Stewart Electronics (03 9543 3733), and Truscotts Electronic World (03 9723 3860). The variable capacitor (it has a 95 and a 200 pF gang) may be ordered from Truscotts, and All Electronic Components (03 9662 3506), although any well-made 100 pF will do. The remaining parts should also be available from the above, or any of the other popular electronics component suppliers. No parts are rare. However, if you have genuine difficulty in obtaining any of the specified components, I always keep a few spares, so please write to me at the address shown.

References and Further Reading

1. *The Neophyte Receiver; Dillon, WA3RNC in QST, Feb '88.*
2. *The Sudden Receiver; Dobbs, G3RJV in Practical Wireless, Mar '91.*
3. *"Paddyboard" Construction, Diamond, in Amateur Radio, Feb '95.*

Parts List

Capacitors	Qty
25 pF air variable "beehive" trimmer	1
95 or 100 pF air variable capacitor	1
470 pF styroseal	2
3n3 (3300 pF) monolithic or ceramic	2
10n (0.01 µF) monolithic or ceramic	1
100n (0.1 µF) monolithic	6
2.2 µF 10 V electrolytic	1
47 µF 10 V electrolytic	2
Resistors	
10R 1/4 W	1
560R 1/4 W	1
5 k log potentiometer	1
Semiconductors	
NE602(AN)	1
LM386(N-1 etc)	1
5.1 V or 6.2 V 400 mW Zener	1
Miscellaneous	

Metal case to suit (see text), printed circuit board material, 9 V "transistor" battery and connector, on/off switch, miniature speaker, vernier dial, sensitivity potentiometer knob, coax plug and socket, Amidon T50-2 (red) toroidal core, #24 enamel wire, hook-up wire, miniature coax, screws, nuts, spacers, solder etc. **ar**

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■ Equipment Review

YAESU FT-8100R

Reviewed by Paul McMahon VK3DIP
47 Park Avenue
Wattle Glen VIC 3096



The Yaesu FT-8100R. Note the uncluttered front panel, and how compact the transceiver is in comparison to the standard-sized hand-held microphone.
(Photo by Vicki VK3LT)

What Is It?

The FT-8100R is a dual band (2 m and 70 cm) FM mobile transceiver, with up to 50 watts of transmit output power on VHF and up to 35 watts of transmit output power on UHF. The receiver coverage is from 110 MHz to 550 MHz, and from 750 MHz to 1300 MHz (blocked 869 to 894 MHz). The unit is of mid-size (140x40x165 mm) and weight (1.0 kg). The review unit was kindly supplied by Dick Smith Electronics and had the serial number 7E022196. Retail price is \$899.

First Impressions

This radio is all about Yaesu getting back to basics. The obvious comparison is with the FT-8500 I reviewed about 12 months ago. Gone are the fancy single knob on the box, the complex microphone control, the menus, and the spectrum scanning display and associated gee whiz functions. Instead, with the FT-8100R we have almost the opposite; there is a knob or button for very nearly all functions on the front panel of the set, with effectively no menus. Also, the features have been concentrated, in the main part, in basic

RF areas such as the extended receive coverage now rated at up to 1.3 GHz!

As can be seen from the photos the front panel layout, even with all the buttons, is quite uncluttered. The large display is viewable in all lighting conditions and incorporates a nice trick of providing the labels for the row of eight buttons along the bottom. These labels change when the function or shift button is active, so there is little chance of mistaking which button to press for which function.

As is pretty much standard with dual band sets, one half of the display is for each band with separate indications of frequency and signal strength, etc.

The set (via the display) also does something that I have not seen before but which is a really good idea. On power-up, the display briefly shows the DC line voltage. Speaking as someone who has twice blown up finals when a power supply has decided to deliver 18 volts instead of 13.8 (drat those LM723s), this is a great idea.

The only extra I would ask for is an optional interlock that would then disable the transmitter if the supply was

outside voltage limits. Once again Yaesu has shown that they are thinking and innovating, introducing features that should become standards.

The microphone connector is, as usual these days, one of those pseudo phone connector plastic click-in things. The microphone looks large but fits the hand well with receive and transmit audio quality that seemed good in subjective on-air tests.

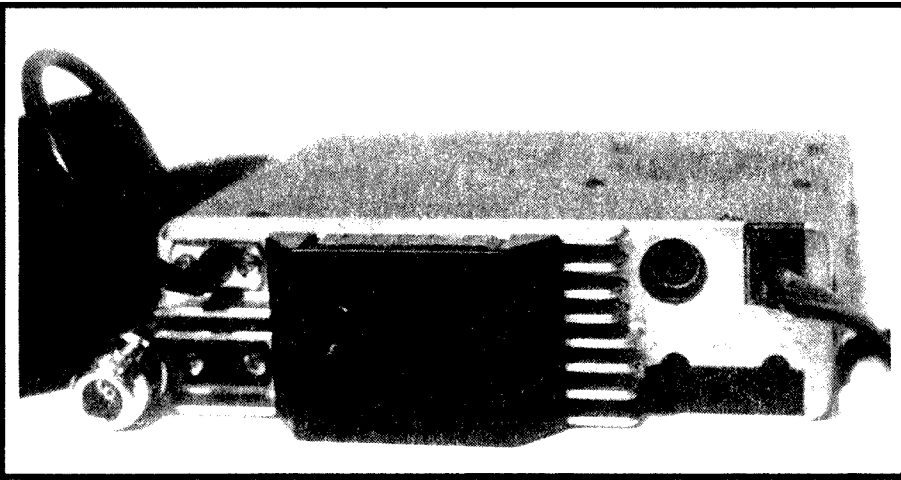
Despite the recommendation in the front of the manual that you should read it through prior to use, I had no problem at all with just powering the set up and using it on-air. The main knobs and buttons did what I expected them to do, and I only had to resort to the manual when testing out some of the fancy memory functions.

The manual is a well written 64 pages of information covering operation of the set in detail, including discussions of such things as coax cable losses and what causes birdies in general coverage receivers. Also included is a full set of circuit diagrams and a quick-guide card. Included in the standard Styrofoam and cardboard box is a mobile mounting bracket, power cable, spare fuse, and miscellaneous nuts and bolts for the bracket.

Technical Bits

The receive frequency coverage of the set is basically a very wide 110 MHz – 1300 MHz with two holes at 550-750 MHz and 869-894 MHz, the latter being the main analogue cellular mobile phone band. The nominal VHF receiver handles 110 to 280 MHz while the UHF one does 280 MHz and up. The segment 110-137 MHz will default to AM reception, however FM can be selected by pressing the appropriate button.

The transmit coverage is 144-148 MHz and 430-450 MHz. This 20 MHz of UHF does not come without some problems as, at least in the set I tested, the auto repeater offset function didn't 100% match the Australian band plans. This isn't a major problem as the auto function can be deactivated and is mainly wrong in the 440-450 region where there is little or no voice repeater activity that I am aware of in Australia. The circuit/block diagram is as good as I am coming to expect from Yaesu.



A rear view of the FT-8100R showing the solid die-cast heat-sink with the integral thermostatically-controlled fan. (Photo by Vicki VK3LT)

The specifications describe the set as a double conversion superhet with a 45.05 MHz and 58.525 MHz first IF on VHF and UHF respectively, with both bands using a 455 kHz second IF. Sensitivity for 12 dB SINAD is claimed as less than $0.18 \mu\text{V}$ for a main receiver but only less than $0.25 \mu\text{V}$ when a sub receiver. These figures (as are the selectivity, spurious, and image rejection) are on a par with other like boxes. These figures are, in fact, exactly the same as that of the FT-8500.

Rated audio output is 2 watts, and subjectively sounded clear and clean. For the transmitter the rated power outputs were 50, 20, and 5 watts on VHF, and 35, 20, and 5 watts on UHF (ie more or less the standard for this class of set these days). Peak current drain at maximum rated power out is given as 10 amps at 13.8 volts, which is actually a bit less than usual. For example, the FT-8500 was rated at over 11 amps for the same power output.

Thanks to some decent test equipment obtained courtesy of Charles Edmonds VK3CLE, I was able, in this case, to investigate a bit further just what these claimed figures meant. Basically, the story that surfaced was that within the ham bands this set performs very well; outside the ham bands performance falls off but is still usable. For example, at 435 MHz the claimed sensitivity for 12 dB SINAD is better than $0.18 \mu\text{V}$; in fact I measured it at $0.15 \mu\text{V}$ which is actually about 1 dB better than that. If you are interested, at 435 MHz with $0.18 \mu\text{V}$ I got 17 dB SINAD.

Once you move out of the ham band, though, things change quite drastically. At 485 MHz, for example, the figure obtained for 12 dB SINAD was $0.25 \mu\text{V}$ which is what was claimed for the sub receiver. This was not what I had thought was meant by sub receiver. I had equated this with the option of V/V or U/U, that is using both halves of the set on the same band. When I tested this feature, however, I found that it was worse again, giving, for example, $0.5 \mu\text{V}$ for 12 dB SINAD when using the nominal VHF receiver at 435 MHz.

Unfortunately, I was unable to test accurately the reception at 1296 MHz. It could certainly receive signals but I have nothing even remotely calibrated at that frequency (hint to Charles and other generous souls!). I suspect it was a bit deader than the $0.25 \mu\text{V}$, but I could be wrong.

We can make sense of these measurements by looking at the circuit for the receivers. Basically the incoming signal is split via high and low pass filters between two independent receivers, one via the low-pass for nominally VHF, and one via the high-pass for UHF and SHF. Each receiver has multiple front ends feeding virtually identical wide-band double balanced mixers and IF chains. In each case there is one front end dedicated just to the appropriate ham band, and one or more front ends for a wider range of frequencies. For VHF the ham band front end is track tuned and all others are fixed tuned.

The more narrow band tuned front

ends obviously produce better results than the less tuned more scanner-like front ends, thus the better than $0.18 \mu\text{V}$ for 12 dB SINAD for the main band receiver (ie ham specific front end), versus the better than $0.25 \mu\text{V}$ for the sub band receiver (ie same receiver but with the wider band less tuned front end).

The extra 6 dB loss in V/V or U/U mode can also be seen to be a function of the way it is achieved. If, for example, you wished to have both receivers tuned to somewhere in the two metre band (ie V/V operation), the normal VHF receiver will utilise the optimised or narrow band ham front end while the UHF receiver, rather than using one of its front ends, will be connected to the VHF receiver's wide band front end. The extra switching losses account for the 6 dB.

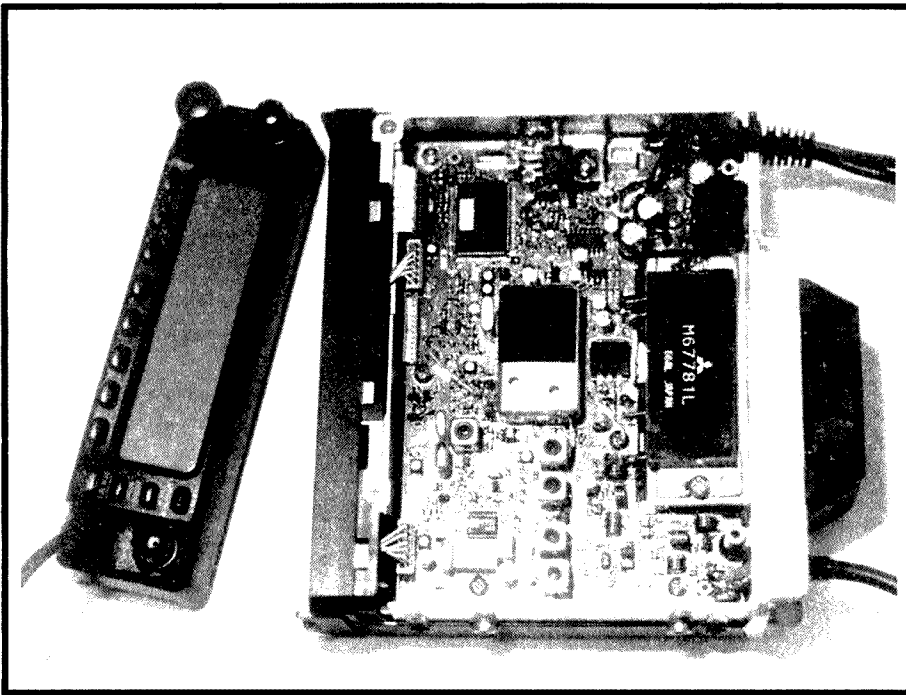
The circuit is very similar to that of the FT-8500, with two exceptions, both in the receiver area. In the FT-8100R there is a third front end in the UHF case for SHF reception, and secondly the Double Balanced Mixers are active using a pair of FETs rather than passive using a four diode ring.

Operation

As can be seen in the photo, the set has a solid die-cast heat-sink on the rear with an integral fan. This fan is thermostatically controlled and, while the noise is noticeable in a base station environment, it would not be when mounted in a car.

The set has only a single flying lead N type coax connector for both bands. This is very convenient when using a dual band antenna. However, an optional diplexer is available if you are going to use this set as a base station with separate antennas for each band.

The manual contains a good section on installation and general use of the set, including, as a sign of the times and the current awareness of the possible hazards of RF, a section on safety containing items such as "Do not use directional antennas in any locations where humans or pets may be walking in the main directional lobe, and during vehicular operation when stopped in a parking lot, etc", and "make it a practice to switch to low power if there are people walking nearby". The one about



The FT-8100R out of its case and with the front panel removed. Note that the inside of the box is quite empty looking with extensive use of surface mount and miniature components. (Photo by Vicki VK3LT)

not wearing earmuff headphones while driving I must admit, though, gave me a bit of a chuckle. If you are concentrating that much on hearing the stations down in the noise then you certainly shouldn't be trying to drive at the same time, headphones or not!

The set has a total of 203 memories (103 per band). This is roughly twice the number of the FT-8500 but, while they all still store frequency, repeater shift, and tones, there is no alphanumeric naming of memories. Tuning step sizes of 5, 10, 12.5, 15, 20, 25, or 50 kHz are available. All of the usual VFO and memory scanning features, as well as DTMF paging, etc. are available (with the optional CTCSS module installed).

One nice new feature is the ability to do what is called a smart search. This feature is normally found on scanners and is like a normal VFO scan. However, as it finds frequencies in use, instead of stopping, it just saves the frequency away in a set of special memories (up to 50 per band, 25 below where you started 25 above) for later human evaluation. On review of these memories you can choose to place them in a standard permanent memory or discard them. I found this particularly useful when scanning the wide band receive range

looking for signals at the small step size; this can take quite some time so it was nice to be able to set it going and walk away, then come back later and review what had been found. I presume it would also be a help in contests where you are trying to find where everybody is.

While the set can be set up to work in either a one-way or two-way cross band repeater mode, there is the basic limitation that you cannot transmit on both bands at the same time. Receiving on both bands at once is fine, there are even separate external speaker sockets

on the rear if you want to have VHF come from one speaker and UHF from the other.

The transmit limitation does, however, lead to one non-obvious (at least it was to me) limitation of the set when used for Packet Radio. While the set, in common with most new ones these days, has a data connector for both 1200 and 9600 baud TNCs, it can only be used with whatever band happens to be the main one at the moment. That means you cannot be chatting away on two metres while down-loading some messages from a bulletin board on 70 cm. Packet needs the transmitter, not just the receiver. I suspect this limitation is present in most, if not all, of the sets on the market today.

The photos show that the front panel can be removed and (with the appropriate optional cable) remotely mounted for both security and ease of finding dashboard space to mount it. Also, you can see from the photo that the inside of the box is quite empty looking with extensive use of surface mount and miniature components. Unfortunately, while this obviously keeps the costs down and the reliability up, it does make it a bit hard for the average ham to fix or modify the rig themselves, even with the circuit diagram provided.

Conclusion

Yaesu have come up with a really good work-horse mobile rig here. At the right price I could see lots of them being sold.

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WIA News

Morse Code Fades on Blighty's Shores

The first of January marked the end of the use of Morse code for ship-to-shore communications in the UK. It first rose to prominence after Marconi saw the potential of wireless as a communications medium for ships at sea.

On the last day of 1997, farewell messages were transmitted in Morse on 500 kHz but, in the midst of these, a genuine emergency SOS on the frequency was very nearly dismissed as a hoax!

Satellite communications are replacing low and medium frequency technologies in maritime distress applications, as satellite technologies have proved more reliable and require far less operator intervention, according to the RSGB's *GB2RS News* for 11 January 1998.

The abandonment of Morse code for maritime distress communications in Australia won't come for 12 months or more, according to the National Search and Rescue Authority in Canberra.

[Released 13/1/98]

■ AWARDS

The WIA Awards Program

John Kelleher VK3DP – Federal Awards Manager
4 Brook Crescent, Box Hill South, VIC 3128
Phone (03) 9889 8393

Awards are an important and exciting part of the activity of amateur radio, and the spirit of competition and achievement in earning awards has helped the leisure time activity of amateur radio grow into the marvellous hobby/sport activity it is today. The WIA provides several attractive awards, which are available to all radio amateurs.

General Rules

Cost: Free to all WIA members. VK non-members pay \$AUS5.00 and all others are required to pay \$US5.00 or 8 IRCs.

Verifications: Applicants need to hold QSL cards for contacts claimed. However, do not send cards with your application. A list of all contacts is needed which should contain the following information: date, time (UTC), callsign of station contacted, frequency, and mode. In some cases, country identification may also be required.

Contacts should be listed in alphabetical order of callsign prefix. At the bottom of this list should be a declaration signed by an official of a recognised Society, or by two independent licensed amateurs. Signatories to the declaration should clearly indicate their names and callsigns.

Applications

Applicants should clearly state whether they are WIA members and, if so, list their membership number. Where relevant, changes in callsigns and dates of such changes should be indicated.

All contacts for any particular award should be made from the same call area.

Cross-band contacts are not eligible, nor are those made through terrestrial repeaters, from aircraft, or to or from sea-going vessels.

Where a fee is payable, this should be included with the application.

In cases of dispute, the decision of the Federal Awards Manager and two officers of the Federal WIA on the interpretation of the above rules shall be final and binding.

Applications should be sent to: Federal Awards Manager, 4 Brook Crescent, Box Hill South VIC 3128 Australia.

WIA DXCC Award

This award is available to all amateurs who submit evidence of having worked and confirmed 100 countries, and can be endorsed for various bands or modes. Acceptable countries are those listed for ARRL DXCC with the WIA reserving the right to make different decisions in regard to additions and deletions which are listed from time to time.

Having obtained the DXCC Award, holders may register subsequent claims for higher totals, and these will be published in *Amateur Radio* in the form of a ladder. Stickers are awarded to those who achieve Roll of Honour status.

Should a "country" be deleted from the DXCC list, credit for that country will be allowed if worked before the date of deletion. The DXCC ladder will show the member's tally of current countries and a total of current plus deleted countries, eg 200/220 – meaning 200 current countries, and an extra 20 that have been deleted at some time, but were worked before the date of deletion. All claimed contacts must have been made from the same DXCC country. General rules apply.

Worked All VK Call Areas

Known as the "WAVKCA", this colourful certificate is the WIA's most popular award. There are separate requirements for local and overseas amateurs. VK applicants require 73 contacts as follows:

VK0 – 3 contacts from at least 2 different areas.

VK1 – 3 contacts on at least 2 different bands.

VK2, 3, 4, 5, 6 and 7 – 10 contacts from each call area on at least 3 different bands.

VK8 – 3 contacts on at least 2 different bands.

VK9 – 4 contacts from at least 3 different areas.

General rules apply except VK applicants need not hold QSL cards.

DX applicants require only 22 contacts as follows:

VK0, VK1 – 1 contact from each call area.

VK2, 3, 4, 5, 6 and 7 – 3 contacts from each call area.

VK8, VK9 – 1 contact from each call area.

Contacts must have been made after 1 January 1946. General rules apply.

Heard All VK Call Areas

This is a "heard only" version of the WAVKCA award, available to SWLs on the same basis as to licensed amateurs, the same fees and procedures applying. Again, general rules apply.

Worked All VK Call Areas (VHF) Award

Requires 22 contacts on VHF bands as follows:

VK0, VK1 – 1 contact each.

VK2, 3, 4, 5, 6 and 7 – 3 contacts from each.

VK8, VK9 – 1 contact each.

Contacts must have been made after 1 January 1958.

If the applicant moves to a new location, and this new location exceeds a distance of 240 km from the old, a new application will be necessary for the new QTH. General rules apply.

Worked All States (VHF) Award

Requires 8 contacts on VHF bands (50 MHz and above), one contact with each State and Territory listed:

VK1 – Australian Capital Territory.

VK2 – New South Wales.

VK3 – Victoria.

VK4 – Queensland.

VK5 – South Australia.

VK6 – Western Australia.

VK7 – Tasmania.

VK8 – Northern Territory.

General Rules apply.

Australian VHF Century Club Award

Requires 100 contacts on VHF bands (50 MHz and above) with 100 different stations, at least 70 of which must be Australian stations.

Separate awards will be issued for each different VHF/UHF band. Contacts must have been made on or after 1 June 1948. The same rules apply, as in the previous award, where the applicant moves to a new location in excess of 240 km from the old.

WIA Antarctic Award

Applicants need to make ten confirmed contacts with amateur stations conducting valid operations from Antarctica. The 10 must include stations licensed by at least six different government authorities, and one must be from VK0.

Antarctica is defined as the land mass, including islands and the permanent ice shelf, below 60 degrees South latitude (this, therefore, excludes Heard and Macquarie Islands).

Only contacts on or after 23 February 1988 are valid for this award. General rules apply.

WIA Grid Square Award

Applicants require contacts with "Maidenhead" grid square locators as listed below. Grid squares are designated by a combination of two letters and two numbers. Minimum requirements are:

All HF bands (including WARC) – 100 contacts.

50 MHz – 50 contacts.

144 MHz – 30 contacts.

432 MHz – 25 contacts.

1296 MHz – 10 contacts.

13 cm and above – 5 contacts.

Cross-band, repeater, satellite or other relay methods are NOT permitted. Aeronautical or maritime mobile stations are also excluded.

Mobile operation is encouraged to allow such operators to work from 100 different locators.

Only contacts made on or after 1 January 1990 qualify for this award. General rules apply.

Changes in the Allocation of International Callsign Series

As most will have noticed, the DXCC information and countries list was excluded from the current *Australian Call Book*. The following list includes allocations of call sign blocks which may or may not have been included in previous WIA lists:

EKA – EKZ Armenia
 A8A – A8Z Liberia
 ATA – AWZ India
 AYA – AZZ Argentina
 BAA – BZZ China
 C4A – C4Z Cyprus
 DSA – DTZ S Korea
 E2A – E2Z Thailand
 E3A – E3Z Eritrea
 EKA – EKZ Armenia
 EMA – EOZ Ukraine
 ERA – ERZ Moldova
 ESA – ESZ Estonia
 EUA – EWZ Belarus
 EXA – EXZ Kirghiz
 EYA – EYZ Tajikistan
 EZA – EZZ Turkmenistan
 H2A – H2Z Cyprus
 H3A – H3Z Panama
 H6A – H7Z Nicaragua
 H8A – H9Z Panama
 HNA – HNZ Iraq
 HWA – HYZ France
 J4A – J4Z Greece
 JZA – JZZ Indonesia
 L2A – L9Z Argentina
 LYA – LYZ Lithuania
 MAA – MZZ UK & N Ireland
 OKA – OLZ Czech Republic

OMA – OMZ Slovak Republic
 P3A – P3Z Cyprus
 P5A – P9Z N Korea
 PKA – POZ Indonesia
 T4A – T4Z Cuba
 T5A – T5Z Somalia
 T6A – T6Z Afghanistan
 T8A – T8Z Palau
 T9A – T9Z Bosnia & Herzegovina
 TDA – TDZ Guatemala
 THA – THZ France
 TMA – TMZ France
 TOA – TOZ France
 TSA – TSZ Tunisia
 TVA – TXZ France
 UAA – UIZ Russian Federation
 UJA – UMZ Uzbekistan
 UNA – UOZ Kazakhstan
 URA – UTZ Ukraine
 UUA – UZZ Ukraine
 V6A – V6Z Micronesia
 V7A – V7Z Marshall Islands
 VAA – VGZ Canada
 XJA – XOZ Canada
 XQA – XRZ Chile
 XSA – XSZ China
 XYA – XZZ Myanmar
 YLA – YLZ Latvia
 YMA – YMZ Turkey
 Z3A – Z3Z Macedonia
 ZNA – ZOZ UK & N Ireland
 ZQA – ZQZ UK & N Ireland
 2AA – 2ZZ UK & N Ireland
 3EA – 3FZ Panama
 3GA – 3GZ Chile
 3HA – 3UZ China
 3ZA – 3ZZ Poland
 4AA – 4CZ Mexico
 4DA – 4IZ Philippines
 4JA – 4KZ Azerbaijan
 4LA – 4LZ Georgia
 4TA – 4TZ Peru
 4VA – 4VZ Haiti
 5CA – 5GZ Morocco
 5JA – 5KZ Colombia
 5LA – 5MZ Liberia
 5PA – 5QZ Denmark
 6AA – 6BZ Egypt
 6CA – 6CZ Syria
 6DA – 6JZ Mexico
 6KA – 6NZ S Korea
 6OA – 6OZ Somalia
 6PA – 6SZ Pakistan
 6TA – 6UZ Sudan
 6XA – 6XZ Madagascar
 6ZA – 6ZZ Liberia
 7AA – 7IZ Indonesia
 7SA – 7SZ Sweden
 8AA – 8IZ Indonesia
 8OA – 8OZ Botswana
 8SA – 8SZ Sweden
 8TA – 8YZ India
 8ZA – 8ZZ Saudi Arabia
 9AA – 9AZ Croatia
 9BA – 9DZ Iran
 9EA – 9FZ Ethiopia
 9WA – 9WZ Malaysia

DXCC Listings

As at 1 January 1998

Phone – Roll of Honour

VK5MS 328/381
 VK5WO 328/360
 VK6LK 328/352
 VK3QI 328/341
 VK4OH 328/334
 VK3DYL 328/333
 VK5QW 328/332
 VK4LC 327/373

VK3AKK 327/338
 VK2FGI 327/332
 VK6RU 326/380
 VK6HD 326/350
 VK4RF 326/344
 VK1ZL 326/331
 VK5XN 325/345
 VK4UA 325/338
 VK3AMK 322/340
 VK6NE 322/337
 VK5EE 322/327
 VK2AVZ 320/330
 VK7BC 320/329
 VK3YJ 318/323
 VK2DEJ 318/323
 VK3CSR 317/325
 VK4AAR 317/320
 VK6VS 316/319
 VK3OT 315/327

Phone

Ordinary List

VK6AJW 312/317
 VK6APK 311/315
 VK5WV 307/326
 VK6PY 307/312
 VK3RF 304/311
 VK6RO 302/307
 VK3JI 298/312
 VK3IR 295/298
 VK4DP 294/305
 VK2WU 292/296
 VK4BG 287/302
 VK3CYL 283/288
 VK5OU 281/286
 VK3VU 272/275
 VK4SJ 270
 VK3GI 264/267
 VK3DP 260/263
 VK3VQ 259/276
 VK5IE 259/261
 VK4CY 249/250
 VK6ANC 245/248
 VK2PU 244/247
 VK3CIM 243/246
 VK3UY 243/244
 VK6YF 238/241
 VK7TS 237/238
 VK2CKW 234/237
 PS7AB 233/237
 VK4ICU 232/234
 VK4LV 232/234
 VK6APW 228/229
 VK3DS 226/236
 VK2ETM 226/227
 VK3SM 222/242
 VK5BO 218/222
 VK3DD 214/217
 VK4XJ 204/216
 VK3DVT 202/204
 ON6DP 200/202
 VK4EJ 200/202
 VK4KRP 199/201
 VK3EFT 198/201
 VK4BAY 190/192
 VK4AU 190
 VK6BQN 186/190
 VK6WJH 183
 VK4IL 176
 KA1TFU 175/178
 WA1MKS 171
 VK2BQS 164/167
 VK2NO 157
 VK4IT 154/155
 VK4CHB 152/153
 VK4ARB 149/150
 7J1AAL 149/150
 VK4DMP 147/148
 VK2HV 142
 VK2SPS 141/143

VK3DNC 141/142
 VK6LC 139/140
 VK2EQ 139
 VK6LG 135
 TI2YLL 129
 VK3DQ 127/141
 YC8BWN 127
 YC8EMH 126/127
 VK6ABS 126
 SM6PRX 122/126
 VK3TI 122/125
 HL4YD 118/119
 VK4VIS 116/118
 VK7WD 115/116
 VK3BRZ 114/116
 VK4NJQ 111/115
 VK6NV 111/113
 JA8XDM 111
 C21DJ 109
 VK5GZ 108/110
 JE9EMA 108
 WA6NLJ 107/109
 HC2HYB 106/107
 N4JED 104/105
 VK3EHP 103/105
 VK5UO 105/107
 VK4JLW 105
 JN6MIC 103/104
 Z56IR 102/104
 KB2NEK 102/103
 C21NJ 102
 JH3OHO 101/103
 VK2CMV 100/102
 VK6APH 100/101
 VK4BP 100
 ON4BCM 100

CW Roll of Honour

VK3QI 328/339
 VK6HD 324/344
 VK3XB 316/350

CW Ordinary List

VK5WO 312/317
 VK4RF 306/332
 VK3KS 303/330
 VK6RU 275/319
 VK3AKK 270/275
 VK4JLW 249/256
 VK3DP 236/239
 VK7BC 234/243
 VK2CWS 233/235
 VK4DA 221/223
 VK3CIM 219/220
 VK3DQ 218/245
 VK3EBP 210/212
 VK4ICU 208
 VK4JP 205/216
 VK6MK 202/204
 VK7RO 201/204
 VK6PY 191/194
 VK6HW 179/182
 VK4CY 178
 VK5GZ 175/177
 VK7TS 163/164
 VK5BO 159/184
 VK5UO 156/157
 VK3DNC 154/157
 VK4XJ 150/163
 WA5VGI 146/148
 VK4UA 143/145
 EA6AAK 138
 VK7DQ 137/138
 VK4AAR 131/133
 VK2TB 123/125
 VK2BQS 121/123
 VK3AGW 119/120
 VK4CMY 117/118
 SP1AFU 112/113
 VK5BWW 110/111
 VK6NV 109/110

OKIFED 109
 VK5QJ 107/109
 VK2FYM 106/108
 VK8KV 102/103
 VK8XC 101/103
 VK3AMK 100/102

DXCC Open

Roll of Honour

VK5WO 328/364
 VK3QI 328/342
 VK7BC 328/336
 VK5QW 328/332
 VK3AKK 327/338
 VK6RU 326/380
 VK4RF 326/361
 VK6HD 326/351
 VK4UA 325/340
 VK3JA 324/371
 VK3AMK 323/341
 VK2AVZ 320/330
 VK3XB 318/347
 VK3OT 318/330

DXCC Open

Ordinary List

VK3JI 311/339
 VK4DP 310/323
 VK6PY 309/316
 VK6RO 308/312
 VK3UY 308/310
 VK3DP 303/307
 VK4DV 302/316
 VK4BG 294/312
 VK4CY 287/290
 VK3CYL 283/288
 VK3VQ 274/291
 VK3CIM 267/270
 VK5BO 264/301
 VK4LV 263/270
 TF5BW 260/264
 VK4ICU 257/259
 VK7TS 253/254
 VK6ANC 247/250
 VK5UO 241/244
 VK2CWS 239/241
 VK2ETM 239/240
 VK6APW 239/240
 VK3DQ 233/262
 VK4XJ 233/249
 VK4DA 222/224
 WA5VGI 216/218
 VK6MK 209/211
 VK2EFT 202/205
 VK5GZ 185/187
 VK3DNC 185/187
 VK2BQS 180/183
 PR7CPK 174/175
 VK6NV 172/173
 VK4CHB 160/162
 VK2NO 158
 VK8XC 150/152
 VK6LC 142/144
 VK2SPS 142/144
 VK2HV 142
 VK4NJQ 133/139
 VK4EZ 129/138
 YB8GH 127/129
 VK3VB 126/128
 VK4CMY 120/122
 VK7HV 114/117
 SP1AFU 114/115
 VK2FYM 113/115
 VK5BWW 111/112
 VE7BS 106/107
 VK3OZ 104/105
 VK3COR 102/104
 SM7WF 101

ar

■ Novice Notes

Amateur Radio on the World Wide Web

Peter Parker VK1PK
7/1 Garran Place, Garran ACT 2605
Email: parkerp@pcug.org.au
Novice Notes Online: <http://www.pcug.org.au/~parkerp/nonline.htm>

Introduction

The Internet contains a huge amount of information on nearly all facets of amateur radio. A barrier to accessing all this material is the time taken to search for the information you need, particularly if you pay by the minute for your on-line time.

This article provides information on a number of Web pages of interest to the newcomer to amateur radio. With this article, you will be able to access information on many aspects of amateur radio without having to first use search engines and wade through dozens of unwanted listings.

News, Information, Education and Software

Australian Amateur Radio Frequently Asked Questions (FAQs)

<http://www.ozemail.com.au/andrewd/hamradio/hamfaq.html>

Maintained by Andrew Davis VK1DA, this page is your first stop if you are just becoming interested in amateur radio. As its name suggests, it provides answers to questions people commonly ask about amateur radio. Armed with this knowledge you are then ready to look at sites such as *Novice Notes Online*, which provides more detailed information on various facets of amateur radio.

Australian Radio Amateurs on the Internet

<http://www.mpce.mq.edu.au/~guy/amateur.html>

Do amateurs you know have an e-mail address and/or a personal Web page? Find out by visiting this site. Information on this site is fairly current – it is regularly updated by Guy VK2BBF.

DOS computer programs for the radio amateur

<http://www.cdrom.com/simtel.net/msdos/hamradio.html>

The Simtel.Net MS-DOS Collection contains numerous programs of interest to

the radio amateur, SWL and electronics buff. There's dozens of ideas to make your old XT or 286 computer earn its keep around the shack.

Elmers online

<http://www.novia.net/~pschleck/elmers/>

"Elmer" is an American term for an amateur who helps newcomers study for their licence and get set up on air, much like what we'd call a mentor. If you don't have one but are bursting with questions, you can now get help from a number of amateurs with e-mail who have volunteered to be "Internet Elmers". The list of Elmers is divided by country and operating interest to ensure that you can direct questions to the person best able to answer.

Ham Radio Online

<http://www.hamradio-online.com/>

A very comprehensive US-based amateur radio news service with reports of current events and articles on key issues facing the Amateur Service. Well worth a read.

K3TKJ's guide to amateur radio mailing lists

<http://www.qth.net/>

If you decide to specialise in one or two narrow aspects of amateur radio, you may wish to keep in touch with like-minded enthusiasts around the world. For this purpose the use of an Internet mailing list is ideal. The above URL provides a detailed guide to lists specific to various facets of amateur radio.

WIA NSW Bookshop and WIA NSW Education Service

<http://marconi.mq.edu.au/wia/bookshop.html>

This page provides details of books and educational material (including the Novice Study kit) stocked by the NSW Division of the WIA. Prices and titles carried should be similar in other states; enquire with your local Division.

Licensing Information

Australian Communications Authority

<http://www.aca.gov.au>

This page contains advice on regulations and licensing conditions applicable to the Amateur Service in Australia. There is also information on calculating multi-year licence fees, but I challenge anybody to get a correct result! A frames-capable browser is required to view this page.

Amateur radio organisations

Most WIA Divisions have their own web sites. The comprehensiveness and currency of pages varies between states. To see what your Division offers net surfers, type in the appropriate URL below.

WIA ACT

<http://www.vk1.wia.ampr.org/>

WIA NSW

<http://marconi.mpce.mq.edu.au/wia>

WIA VIC

<http://www.tbsa.com.au/~wiavic/>

WIA QLD

<http://www.wiaq.powerup.com.au>

WIA SA

<http://www.vk5wia.ampr.org/>

WIA WA

<http://www.faroc.com.au/~vk6wia/>

WIA TAS page under construction

In addition, some clubs have their own web sites. These are not listed here but links to them can be found on some WIA Divisional sites.

The New Zealand Association of Radio Transmitters (NZART) has a comprehensive web page containing news and links on amateur radio in New Zealand and beyond. Its URL is <http://www.nzart.org.nz/nzart/>. Young Amateurs New Zealand also has a page at: <http://www.nzart.org.nz/nzart/yanz/index.html>.

Operating

Australian amateur radio band plans

<http://www.vk5wia.ampr.org/wia/bandplan/index.htm>

Very detailed information on each amateur band from 1.8 MHz to many GHz. These band plans are produced for all Australian amateurs and provide information on what modes are used on what frequencies. Operating according to them increases the likelihood of you making contacts and reduces the possibility of causing interference to others.

CW Facts and Operating Tips

<http://www.magiclink.com/web/shurst/page2.html>

Maintained by KA7NOC, this page includes a range of material on Morse (CW) operating. There is also advice on learning Morse code.

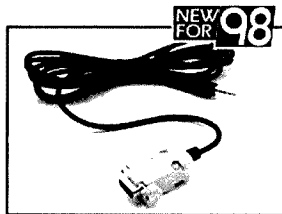
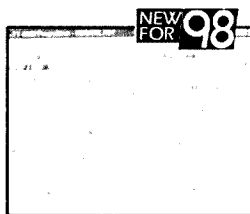
YOUR ONE STOP COMMUNICATION SHOP

Advanced Data Management Software

An advanced way to programme many of the functions on the latest Yaesu handheld and mobile transceivers. Each package consists of an interface that plugs into the serial port of a PC and connects to the transceiver via its microphone socket (for hand-helds) or its Packet socket (for mobiles). Also provided is easy-to-use 3.5" format PC software with pull down menus that allow for programming and naming of memory channels, selection of output power, CTCSS tones, scan and battery saver operation, plus much more.

D-3753 ADMS-1D Suits FT-10/11/S0/51R/VX-1R
D-3759 ADMS-2D Suits FT-3000M/8000R/8500/FT-8100R

\$79⁹⁵



FT-50RD 2m/70cm Handheld

The Yaesu FT-50RD is an amazingly compact 2m/70cm Amateur band handheld transceiver which provides MIL-STD 810 shock and vibration resistance, super wideband receiver coverage, simple menu settings for most functions, and compatibility with the optional Yaesu ADMS-ID software/interface package for PC programming of many functions.

Other features include:

- Tx 144-148MHz, 430 - 450MHz
- Rx 76-200, 300 - 540, 590 - 999MHz (cellular blocked)
- New FTT-12 keypad provides Digital Voice Recording, DTMF paging, CTCSS/DCS scanning, and CTCSS encode/decode.
- 2m/70cm RF output: 2.5, 1.0, 0.1W standard, up to 5W with 9.6V battery or adaptor.
- "Omni-glow" LCD screen for easier night-time viewing
- 112 memory channels with 4 character Alpha-numeric naming

- High speed scanning, 12v DC socket, Digital Code Squelch
- Dual watch allows monitoring of sub-band activity
- Direct FM modulation for better audio quality
- 5 battery saving systems (includes Rx and Tx Save, and Auto Off)
- Rear panel clamshell battery pack
- Comes with FNB-40 slimline 6v 650mA/H Nicad battery pack, flexible 2m/70cm antenna and modified M-9626 AC plugpack adaptor for Nicad charging.

D 3660

2 YEAR WARRANTY



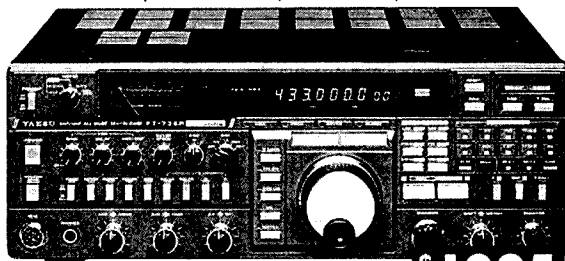
\$599

FT-736R VHF/UHF Base Station Transceiver

Whether your interest is in talking through your local repeater, operating SSB DX, or talking to the world via satellite, this high-performance multimode base station transceiver can do it all! In its standard form, the FT-736R provides 25W output on the 2m (144-148MHz) & 70cm (430-450MHz) bands in SSB, CW, and FM modes. Can be expanded to cover the 6m (50-54MHz) & 23cm (1240-1300MHz) bands by installing optional modules.

Features:

- Keypad frequency entry, 100 memories, selectable FM channel steps
- 2 full-duplex VFOs - transmit & receive frequencies (and modes) can be tuned independently or synchronously for satellite operation.
- Adjustable IF Notch and IF Shift filters, Noise blanker, 3-speed selectable AGC.
- Speech processor and VOX for SSB, Digital input connection for packet TNCs.
- Efficient switch-mode AC power supply. D 2920



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B 3252

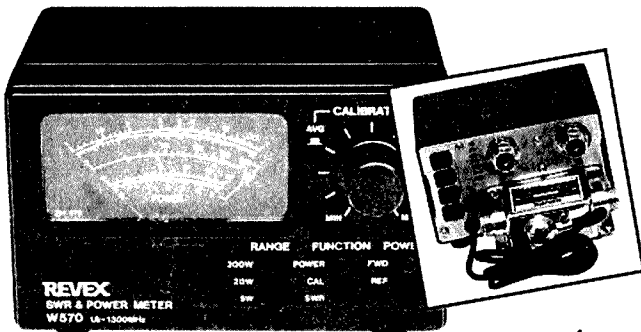
COMMUNICATE MORE CLEARLY WITH THESE

Revex W570 HF/VHF/UHF SWR/PWR Meter

Top of the line performance! The W570 provides switchable 1.6-160, 400-525, 700-1100, and 1240-1300MHz coverage, with measurement of 3 power levels (5, 20, 200W) and SWR. The external UHF sensor uses N-type sockets for minimal loss, and can be mounted remotely for easier cable connection to the meter. Measures 120 x 80 x 155 (including protrusions).

D 1377

\$299



LF-1 DC Line Filter

A line filter designed to reduce noise (such as alternator whine) from the 13.8V DC lead that runs between a Yaesu transceiver and the 12V power system in a vehicle. Rated at 20A intermittent, 18A continuous. The LF-1 is compatible with a number of Yaesu transceivers including the FT-212RH/712RH/912R, the FT-2200/2500M/2400H, FT-5200/8000R/FT-8100R/8500 and FT-3000. D 5390



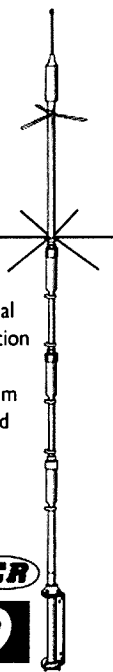
3-15V 25 Amp DC Power Supply

This rugged benchtop power supply is ideal for Ham or CB applications, with current up to 25 amps ICAS at 15V, 20 amp continuous at 13.8V, and lower current at lower voltages. It also has front panel metering, plus high current banana-style and low-current output connections for extra flexibility. An internal heatsink and thermally-switched fan provides cooling without protrusions in the metal case (which measures 320 x 150 x 145mm). Specially modified for more reliable long-term operation, it uses a rugged 50 amp bridge rectifier and trifilar transformer. Also provided is extensive overload protection through dissipation limiting circuitry for the pass transistors, a 30 amp instantaneous current limit, AC mains circuit breaker, a transformer thermal fuse and fused auxiliary secondary winding. D 3800



Rugged HF 5-Band Trap Vertical Antenna

The rugged 5BTV incorporates Hustler's exclusive trap design (25mm solid fibreglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1kW (PEP) power handling. Wide-band coverage is provided on the 10, 15, 20, and 40m bands (SWR typically 1.15:1 at resonance, <2:1 SWR at band edges) with 80kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can be installed without affecting operation of other bands. High strength aluminium and a 4mm (wall thickness) extra heavy-duty base section guarantee optimum mechanical stability. At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike other antenna designs, the 5BTV can be fed with any length of 50 ohm coax cable. D 4920



30m Resonator Kit

Adds 30m coverage to the 5BTV and includes all hardware. D 4921 \$89.95

HUSTLER
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B 3252

Ionospheric Prediction Service

<http://www.ips.oz.au/>

Obtain information on the current state of radio propagation, sunspot forecasts and do your own propagation predictions. Just a few of the attractions available through the IPS site.

KA9FOX Contest and DX Site

<http://www.qthcom/ka9fox/>

A useful resource for contesters and DXers, this page contains material on exchanging QSL cards, contest rules, DX bulletins and more.

OH2BUA DX Cluster

<http://www.clinet.fi/~jukka/webcluster.html>

See who's hearing who (sorted by amateur band) with this DX cluster. Also, use it to alert others of the appearance of rare DX (only after you've worked him first!). A wide range of DX and operating links are available through this award-winning site.

Predicting propagation on the VHF/UHF bands

<http://homepages.ihug.co.nz/~tbabel/zl3ne.htm>

ZL3NE gives some pointers on using weather charts to predict long-distant VHF and UHF propagation. Mainly of interest to the weak-signal SSB/CW operator.

QRZ Online Callbook

<http://www.qrz.com/cgi-bin/webcall>

If you don't have an International Callbook or CD-ROM handy, this site is a useful way to get the names and addresses of stations you work. Simply type in the callsign and the QRZ site does the rest. Both Australian and International addresses are available through this system, though the Australian listings are not always up to date.

Radiosport – the home page of radio contesting in VK4

<http://www.uq.edu.au/radiosport/Rules/index.htm>

Produced by Peter Wetziz VK4TPW and John Loftus VK4EMM, this is an excellent page for those devoted to the competitive side of amateur radio. Contents include contest rules, monthly contest reports, band plans, a calendar, shareware and operating hints. Much of the information has been written with the beginner in mind. Highly recommended.

Equipment Manufacturers and Suppliers

Most of these pages include details of products stocked, store addresses, prices and ordering information.

Manufacturers

Alinco – <http://www.alinco.com/>

Icom – <http://www.icomamerica.com/>

Kenwood – <http://www.kenwoodcorp.com/>

Ten-Tec – <http://www.tentec.com>

Retailers

Amateur Transceiver Radio Centre –

<http://www.australia.net.au/~atrc>

Daycom Communications –

<http://www.daycom.com.au/>

Dick Smith Electronics –

<http://www.dse.com.au/>

Mobile One Antennas –

<http://www.mobileone.com.au>

Outbacker Antenna Sales –

<http://intercon.com.au/outbacker>

Ron Graham Electronics –

<http://www.mackay.net.au/~ron/>

Tower Communications –

<http://www.tower.visionimage.com.au>

Antennas

G3YCC's Antenna Page

<http://www.gqrpcub.demon.co.uk/ants.htm>

Maintained by a well-known QRP enthusiast, this page is part of a larger website that covers all aspects of low power amateur radio. Constructional articles on pieces of antenna test equipment, masts, mobile whips and various wire antennas feature on this page.

GW0TQM's magnetic loop antenna page

<http://ourworld.compuserve.com/homepages/csl/magloop.htm>

If you've been avidly following the discussion on compact antennas in recent *Novice Notes* columns, this page devoted entirely to magnetic loops will be of special interest. Though the theory may get too deep for some, the page, which contains several excellent graphs and diagrams, is a "must see" for anyone interested in these fascinating antennas. Also provided is an exhaustive bibliography on magnetic loops for the experimenter who wants to know more. Highly recommended.

NIKGH's Indoor Antenna Page

<http://www1.shore.net/~dmaison/faqs/carpetloop.html>

Information on a novel "carpet loop" antenna for short wave listeners.

SM0VPO's antennas for 70 cm

On his website, SM0VPO includes details of the popular Slim Jim, co-linear and J-pole antennas scaled for the 432 MHz band. See later for the full description and URL for this page.

W4RNL's Amateur Radio Page

<http://funnelweb.utcc.utk.edu/~cebik/radio.htm>

This page, produced by a prolific antenna experimenter and author, takes some time to load, but the information provided is well worth the wait. Material is presented on a variety of wire antennas and beams. In addition, detailed information on antenna

modelling is provided. This page would be most useful to the amateur, who having got on air with simple verticals and dipoles, is seeking to improve station performance by experimenting with other antennas. Though the technical content gets a bit advanced in places, the page does have an excellent series of articles pitched at novice operators establishing a station on 28 MHz. Topics such as compact and hidden antennas, effect of antenna height, antenna coupling units for 28 MHz and Yagi antennas are just a few of the subjects covered.

W6RCA's Home Page

<http://people.delphi.com/CecilMoore/>

This page includes constructional information on a "bugcatcher" mobile antenna as well as data on popular wire antennas including loops, beams and the G5RV. Also presented is a novel multi-band dipole for eighty to ten metres.

Technical

Amateur radio construction projects

<http://www.pconline.com/~rohrwerk/k0jd/>

K0JD's construction project home page.

Amateur radio construction projects

<http://www.acs.ncsu.edu/HamRadio/HF/qrz/projects/>

More projects for you to try.

How good is your black box's receiver?

<http://sherweng.com/table.html>

New rigs don't necessarily have the best receivers. This site provides performance comparisons between most popular models of amateur equipment. See how your rig stacks up against the rest.

JF10ZL's Homebrew Homepage

<http://www.intio.or.jp/jf10z/>

Contains a range of unusual transmitter circuits that are amazing in their simplicity, but seem to work, as testified by the log extract provided. The page is of particular interest to six metre AM and DSB operators, but it should be possible to modify some of the 50 MHz projects to 28 MHz. Page content is bilingual (Japanese and English).

SM0VPO/G4VVJ Homebrew Homepage

<http://user.tinet.se/~acz732k/>

This page contains many circuits for those who like building things. Projects range from the simple to the advanced and the ordinary to the novel. As noted elsewhere, this page includes constructional information on antennas for the 70 cm band.

SM6LKM's "Optimist" 80m DSB transceiver

<http://home4.swipnet.se/~w-41522/>

This page contains the information needed to build a simple eighty metre double sideband transceiver.

7N3WVM's Homebrew Homepage

<http://www.qsl.net/7n3wvm/>

This is another useful page for people who like building equipment. The twin crystal variable crystal oscillator is of particular interest.

Tomi Engdahl's Electronics Info Page

<http://www.hut.fi/Misc/Electronics/>

An Internet version of those old "500 circuits" electronics books. If you like building things, this page is worth a look.

WIA (SA) Equipment Supplies Committee

http://www.dove.net.au/~markl/sa_vhf/esc_index.htm

This is another useful page for the homebrewer, particularly those who build VHF/UHF and SHF equipment. Along with a range of hard-to-get components, a range of transverter kits is carried for those wanting to make existing equipment operate on different bands.

Packet Radio

Macquarie University Amateur Radio-Internet Gateway

<http://www.marconi.mpce.mq.edu.au/>

This gateway is used for experimentation with various types of packet radio linking and for WICEN purposes. Worth reading if you're a packet enthusiast.

Flex-net packet radio software

<http://d10td.afthd.th-durmstadt.de/~flexnet/index.html>

Apparently, with some of this software featured (which you can download), it is possible to operate packet radio with a computer equipped with a sound card. Computer experts will like this page, but others will be flummoxed.

How packet radio could aid African development

http://www.sas.upenn.edu/African_Studies/Comp_Articles/African_Info_Age.html

Written by Gary Garriot of the Volunteers for Technical Assistance, this page provides an interesting account on the uses to which packet radio can be put for humanitarian purposes in Africa.

N6GN's High Speed Packet Home Page

<http://www.tapr.org/~n6gn/index.html>

If the speed and efficiency of the Internet has caused you to lose interest in packet radio, you may want to look at this page. Ideas and links on high speed packet radio operation are included. Again mainly for those with prior experience in packet radio.

Other Facets of Amateur Radio

Adventure Radio Society

<http://www.narworld.com/ars/>

This society exists for those who wish to

operate radio from locations accessible via human-powered transport.

AM Radio Page

<http://www.thebizlink.com/am/>

This is a US-based page for amateurs who enjoy operating AM on the HF and VHF bands, particularly with vintage equipment. A good read.

Bicycle mobile amateur radio

<http://cycling.org/lists/bikeham/>

Contents of the bikeham mailing list. Occasionally has useful hints for those who operate amateur radio from a bicycle.

Foxhunting around Melbourne

<http://www.ozemail.com.au/~amac/fox.html>

For people who like chasing hidden transmitters around (or in) the Yarra.

Low power amateur radio (QRP)

<http://www.pcug.org.au/~parkerp/qrp.htm>

The Australian QRP Home Page is devoted entirely to under five watt amateur radio. Included is operating hints, advice on equipment, information on the CW Operators QRP Club and more.

Short-wave

<http://www.ee.nyu.oz.au/staff/pbd/SW/index.html>

A very comprehensive page on short wave listening from an Australian perspective.

Ten metres

<http://www.Lehigh.EDU/lists/ten-1/>

This is the site of Ten-Ten International, a world-wide body that promotes activity on ten metres. With sunspot numbers on the up, this will be a useful page over the next few years.

Use a remote-controlled shortwave receiver

<http://www.chilton.com/scripts/radio/R8-receiver>

Hear how the bands sound like from the other side of the world. Sound card needed.

VK3ASE's 160 m AM Home Page

<http://www.geocities.com/CapeCanaveral/7160/>

A good use for your spare AM medium wave broadcast receiver, particularly if your Division relays its news broadcast on 1.8 MHz AM, is to convert it to receive 160 metres. This page tells you how. Also featured is information on late-night 160 metre activity of a somewhat unconventional nature.

WICEN NSW Home Page

<http://marconi.mpce.mq.edu.au/wicen/>

An informative page providing information on the Wireless Institute Civil Emergency Network in NSW. A "must read" for those interested in amateur radio's role in civil emergencies.

ICOM *Clearly Ahead*



"VK3LZ calling!"

More sound information from your friends at Icom.

'98 IS THE YEAR OF THE 746!

Icom's new IC-746 is proving to be one the most significant new product launches in years. The response from the radio fraternity all around the country has been tremendous. The general consensus seems to be that the IC-746 is about the best cost/performance shack unit they've seen. See it for yourself at your nearest authorized Icom dealer soon.

THE WORD IS OUT - OUR NEW HANDHELD TRIBAND IS A WINNER.

Our IC-T8A Triband (2m, 6m, 70cm) is a brilliant new transceiver. Once again Icom has got the cost/performance equation just right with the IC-T8A setting a new benchmark in handheld performance for a very affordable outlay. Hear it for yourself, and check the price...you'll be impressed!

WYONG HAMFEST HERE AGAIN.

The end of February is Wyong Hamfest time so be sure to get along. It's a great opportunity to see all the latest gear we've been enthusing about in this column recently.

We look forward to seeing you there.

"...73"

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Xtal Set Society

<http://www.midnightscience.com/>

A great site for people who experiment with crystal set receivers of all types.

Conclusion

A range of web page URLs on various facets of amateur radio has been presented. Many more can be obtained through the links section of many of the pages listed here. In addition, extra material on many of the topics covered above is available through *Novice Notes Online*, the URL for which is provided at the head of this article.

Further Reading

Amateur Radio has featured a number of articles on the Internet over the last two years. The more significant of these include:

McGhie, W - Getting on the Net, *Amateur Radio*, August 1996

Murnane, R - A Radio Amateur's Guide to the World Wide Web, *Amateur Radio*, July 1996

Murnane, R - Internet Radio Mailing Lists and How to Use Them, *Amateur Radio*, October 1997

ar

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John Moyle Contest Next Month

A reminder that the John Moyle Field Day Contest is on next month. The contest exists to promote portable operation on the amateur bands. On VHF and UHF try listening around the FM simplex calling frequencies. HF activity will be found on 80 metres on the Saturday evening and Sunday morning, and (possibly) on 15 and 10 metres during daylight and evening hours. It takes place over the weekend of 21 and 22 March. Information about portable operation appeared in *Novice Notes* for February 1997, copies of which can be found on *Novice Notes Online*.



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QSP News

Reciprocal Licence and Special Event Call for Astronaut

An Australian "reciprocal licence" with a "Special Event" callsign has been provided for use by Dr Andrew (Andy) Thomas (see front cover photo) whilst aboard the space station MIR.

Based on a suggestion from Peter VK2EMU, the South Australian Division of the Wireless Institute of Australia (WIA) negotiated with the Australian Communications Authority (ACA) for issue of the licence under reciprocal agreement, based on Andy's USA Technician Class licence and call of KD5CHF.

The President of the WIA SA Division, Ian VK5QX, stated that the ACA officers with whom he dealt were most co-operative in handling the requests placed before them.

The special call sign allocated, VK5MIR, is taken from the block of callsigns from which "Novice" calls are usually assigned; however, in this instance, it has been issued with Australian "Intermediate" class licence privileges as being equivalent to the USA Technician Class.

Andy Thomas was born in the city of Adelaide, which is the capital of the State of South Australia (VK5). He carries Australian citizenship as well as the US citizenship required due to his occupation. Following recent intensive training in Russia for his forthcoming mission on MIR, he was able to visit Adelaide over the Christmas/New Year period to see his family and for a much welcomed rest and recreational period.

During this visit an attempt was made using amateur radio to contact his compatriot Dave Wolf KC5VFP aboard MIR as it passed over Adelaide. Unfortunately, this was not successful.

Ian VK5QX was able to meet with Andy and personally present to him his licence together with various forms of "briefing" material regarding Australian Amateur Radio stations known to be well equipped for contact in connection with space operations. Recent copies of *Amateur Radio* magazine, the official journal of the WIA, were included in the material provided.

In receiving the licence, Andy Thomas commented that it was interesting that the

date of issue of the licence was the same as his birthday, 18 December.

The licence is issued for a one year period. However, the ACA has indicated that it will be prepared to issue a callsign from the normal allocation on the completion of Andy's activities on the MIR space station. This would provide Andy with the ability to operate on a reciprocal basis within Australia at other times when visiting this country.

The launch for Dr Thomas to join the MIR space station took place on 22 January 1998, and he boarded MIR on the 24th.

On a biographical note, Dr Thomas obtained his Bachelor of Engineering degree with First Class Honours from the University of Adelaide in 1973. He subsequently took postgraduate studies towards his Doctorate, obtained in 1977. He was employed in the USA with Lockheed Aeronautical Systems in Marietta, Georgia and Jet Production Laboratories, Pasadena California before reporting to the Johnson Space Centre for astronaut training in August 1992.

Ian J Hunt VK5QX

WIA VK5 Division President

Amateur Radio Awards for 1997

After some lively discussion at their January meeting, the WIA Publications Committee decided the *Amateur Radio* awards for 1997. They are:

Technical Award (for the best technical article(s) for 1997):

Dr T C Choy VK3CCA, for his article "The DB 80, an 80 m SSB/CW QRP Transceiver".

Higginbotham Award (for service to amateur radio generally, not necessarily to the magazine):

Peter Parker VK1PK, for his substantial contribution to *Amateur Radio* magazine during 1997, including his bi-monthly *Novice Notes* column and seven separate articles, and his informative amateur radio pages for Novices and QRPers on the Web.

Congratulations to Dr Choy and to Peter, who will each receive a cheque for \$100.

Bill Rice VK3ABP
Chairman, Publications Committee

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We'll Meet Again

I know we have only just started 1998 but, with the years getting shorter all the time, you really must write these dates in your diary NOW (not this year's diary!). The dates are, of course, for the next ALARA meet on 2 and 3 October 1999 in Brisbane (pack the togs and plenty of sunscreen). Bev VK4NBC will be in charge, and I am sure she would love to hear from anyone with ideas on how to make this Meet as good or better than all the others.

Special Lady - Christine WB2YBA/VK4AZJ

In May last year Christine E Haycock MD was selected by the American Medical Women's Association (AMWA) to receive the 1997 Bertha Van Hoosen Award. This award honours a woman physician who has been an active member of AMWA for at least five years, and has demonstrated exceptional leadership and service to the organisation. It commemorates the achievements of Bertha Van Hoosen, the physician who founded AMWA in 1915. The Awards Ceremony took place at the Opening Session of AMWA's 82nd Annual Meeting in November in Chicago, Illinois.

Dr Haycock has demonstrated substantial leadership and commitment to the cause of women in medicine. After years of service on AMWA committees and executive board positions, Dr Haycock was elected president in 1980. Her initiatives during her term as president brought about the restructuring of the organisation in order to promote AMWA's goals. Dr Haycock continues her role as an AMWA leader by serving on the American Women's Hospital committee.

A pioneer among women surgeons, Dr Haycock was the first woman intern in the US Army, and was Board Certified in surgery in 1961 at a time when very few women had such certification. She was also one of the first women to command two Army Reserve hospital units and, in 1977, became the first woman to be class president at the Army War College. In addition to her BS and MD degrees, Christine holds an RN and an MS in Political Science. She retired recently as Emeritus Professor of Surgery from UMDNJ, New Jersey Medical School.

Dr Haycock is a nationally esteemed surgeon and is highly reputable in the speciality of sports medicine. Among her published works are over forty papers on women's sports injuries.

The American Medical Women's Association is an organisation of over 11,000 women physicians and medical students representing every medical speciality. The Association, which has its headquarters in Alexandria, VA, is dedicated

ALARA

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to increasing the influence of women physicians and promoting women's health care.

JOTA 1997

Many YLs take part in JOTA each year, and the photograph shows Bev VK6DE with some of the Guides and Brownies who operated from her shack in Geraldton WA. Bev supervised over 50 girls on the air that

weekend with some of the older ones setting up tents on the lawn to camp overnight.

Silent Keys

Bobbie VK7CBK and Diana ZS6GH. Our sympathy goes to their families.

Stormy Weather

Heather VK2HD suffered days of 45 degrees with unusually high humidity last year. She opened her windows to try to catch a stray breeze but the breeze brought a dust storm through the house as well. Three months previously an electrical storm wiped out Heather's washing machine, damaged her radio and turned her hot water cold. She had no hot water for five weeks.

The last we heard her radio was half working. The receiver worked but not the transmitter. In fact, when she pressed the transmit button the rig switched off! Heather kept listening to the nets she used to be on, but really missed the contact. Almost every day for the past twenty-five years she has had a chat to Pearl ZL2QY (Pearl is in a nursing home) so we hope Heather is back on air by now.

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Bev VK6DE and some of the Guides who operated from her station during JOTA 1997.

**Are you reading someone else's
Amateur Radio?
Call 03 9528 5962
to find out how to get it
every month!**

Morse Exams

Recently I received a letter from a student trying to get his Morse receiving up to speed. He felt that the WIA was not paying enough attention to the methods of teaching CW, and suggested improvements to the examination processes.

I have not written about CW for some time. I DO NOT intend to enter the debate about the continuation of Morse code as a requirement for an amateur licence. For the moment, it is a requirement which candidates must pass, and so we must do what we can to help those who are attempting it.

Perhaps I should start by explaining that the Federal body of the WIA has neither authority over, nor responsibility for, Divisions, Clubs or individuals who run amateur radio classes. Negotiations with the ACA concerning examination syllabuses and procedures are a Federal responsibility, but the classes or courses are offered either to encourage recruits or possibly as a money-making exercise. The WIA can advise on, but not control, how the classes are run.

Learning Morse code seems to be a very personal thing. Some people can learn it in hours, while others need months of continual effort to achieve the required speed. There are not many candidates who are completely unable to learn it, but it is easier to learn if you want to learn, or at least accept that it is a hurdle to be overcome. Some candidates find a musical background to be an advantage, and there is some evidence that young persons learn faster than older.

As for how to learn, there are several

Education Notes

Brenda M Edmonds VK3KT
Federal Education Co-ordinator
PO Box 445
Blackburn VIC 3130

accepted procedures. One school of thought recommends learning the alphabet from A to Z in order by singing "d'dah-A, dah d'dit-B" and so on. Another method is to learn "dit-E, d'dit-I, d'dit-S, d'd'dit-H", then "dah-T, dahdah-M, dahdahdah-O", on the principle of progression of letters. A further alternative is to think in pairs of opposites, eg "d'd'dah-U/dahdahdit-G", and "d'd'dah dit-F/d'dahd'dit-L".

Personally, I recommend the first method (straight through the alphabet). I feel the other methods rely on associations between letters and bring an extra process into the chain. After the letters are known, then it is just continual practice. Best results are usually gained from daily practice; even ten minutes a day is better than two hours per week.

Once the letters are known, concentrate

on increasing the speed. If you do not recognise a letter, let it go and listen for the next. Better to leave a space and get the next letter than to lose several letters worrying about the one missed. If you find that you are journalising, try writing down the letters with your eyes shut, or practise from tapes in a foreign language or random five-letter groups.

Many students find that they tend to "plateau" at about 8 wpm, then pick up speed again in a few weeks. Few students have trouble with the sending. It is not advisable to start sending until you are confident of all the letters and can receive at about 3-5 wpm.

The WIA Exam Service Morse code examination texts send the characters at higher speeds. For the 5 wpm, the characters are sent at 7 wpm, and for the 10 wpm, the characters are sent at 13 wpm. In each case, the spaces between the characters are increased to make the required speed correct overall. There is some evidence that characters sent at 14-16 wpm, whatever the overall text speed, would suit some students better.

The WIA Exam Service has long intended to release ex-exam tapes as practice material. However, this cannot be implemented until the current negotiations with the ACA are completed and agreement has been reached on the future of amateur examinations.

Please accept my somewhat belated wishes to you all for 1998. May you each succeed in bringing another amateur into the WIA and so strengthen our influence in all those areas where numbers count so much.

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Local and International Radio Contests

Contesting is one branch of our hobby that we can all participate in and enjoy whether we are beginners or advanced operators. Contests can range in duration from one hour for local events to a full weekend in the case of international events.

Most affiliated organisations of the IARU such as the WIA, RSGB and the ARRL offer a range of contests that suit the needs of most radio operators, including internal and external contests (internal contests are within one's own country; while, in external contests, contacts can be made with other countries).

Peter VK3APN is the Federal Contest Co-ordinator for the WIA and outlines many local and international contests in his *Amateur Radio* column. In Peter's column you will find information that includes the date and duration of the contest (usually held over a weekend), and a summary of the

Pounding Brass

Stephen P Smith VK2SPS
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contest's rules which should be read and understood prior to entering the contest.

Basically, you select a contest which is within your own capabilities. Unfortunately, this doesn't always happen, resulting in some operators jumping straight in without realising the consequences. A common sense approach to contesting is called for.

Firstly, I would start with locally held events. One that comes to mind is run by the

"CW Operators QRP Club Inc". Scrambles are held once a month and are of one hour duration. All you have to do is contact the operator in question (he usually calls CQT [T=test, short for contest]), and give an RST plus a serial number that increases with each contact (nothing to it!).

You will find this is excellent training for the more advanced contests of longer duration.

The most important thing for the up and coming contester is to keep a log of all contests entered, learn from your mistakes and make notes on how you can improve next time.

The Shack

Some operators are fortunate enough to have a separate room at home where they can operate in peace away from the family. Others, who live in home units, may be restricted in this sense due to space. The ideal shack would be cool in summer and

warm in winter; if you have air conditioning all the better. I guess a lot of us operators will have to regulate our body temperatures by adding or removing clothing until we find the happy medium.

While you are operating at your desk or bench you do not want to be getting up all the time to locate pens, writing pads and log books, etc. All these items should be situated on the desk within easy reach during a contest with the remainder of the desk/bench area clear. Do you have adequate lighting for your area of operation? If not, you may want to purchase a small desk lamp, a very useful item.

About a week prior to a contest have a practice run and think of ways that may improve your operation; but, for goodness sake, do not leave it until the night of the contest. If you have an understanding XYL she can bring you refreshing cups of coffee or tea and something to munch on during the longer events. If you don't have someone to look after you, a good thermos and prepared sandwiches, etc should see you through the contest.

Attention to detail, no matter how small, pays off in the long run. As stated previously, after the contest is over, analyse your performance and make notes on things you may want changed or improvements that

you feel could be made for future contests.

Equipment

Ensure your equipment is in good working order. If you are using valve gear, tune up about an hour prior to the event, making sure you are on the correct frequency. If you are using solid state gear, tune up about twenty minutes prior to the event as this will allow the rig time to heat up and settle down.

Antennas should be in good condition and correctly adjusted for minimum SWR as we require maximum power radiated.

What type of key should you use? Definitely the key you are accustomed to using and not the new key you recently purchased; we all know that a new key will take some breaking in before you begin to feel comfortable with it.

If you are using semi-autos such as Vibroplex bugs, make sure it's correctly adjusted and tested prior to the event; there is nothing worse than an incorrectly adjusted bug. Electronic keyers and paddle combinations should be checked and adjusted if required.

The following is an account of what happened to me during the 1992 VK/ZL Oceania Contest. Several weeks prior to the event I purchased an MFJ-422B-X keyer and

paddle combination. With this model the keyer screws onto the rear portion of the paddle assembly. About two hours into the contest everything was working like clockwork, when suddenly I lost power in the unit. After a hasty check of the unit I found that the 9 V battery had gone flat.

I could not connect my hand key as I had used the stereo plug for the keyer/paddle combination. I was faced now with the problem of locating a Philips head screwdriver and a new 9 V battery.

Yes, you guessed it. I didn't plan for an emergency like this; I was up the creek without a paddle!

I have since made modifications and now have the battery attached to the outside of the unit for ease of replacement. Also, I have my hand key wired in parallel with the connections. Sorry for the VK4 station I was working at the time. As you can see I learned by my mistake, especially when it cost me a contest.

To Reiterate

1. Keep a detailed record of all contests.
 2. Analyse all details up to and after the contest.
 3. Learn by your mistakes.
 4. Have fun!
- Next month, "Zero Beat".

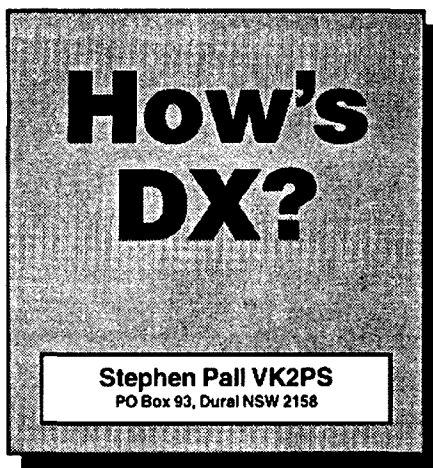
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Samuel Morse

Poor Samuel Finley Breese Morse, the well known(?) portrait painter (1791 - 1872) who studied Art at Yale College and in London, and whose paintings were hung in the New York City Hall and in the New York Public Library!

He became world famous, not for his artistic ability which was considerable, but because he learned, during a dinner conversation at sea on board the ship "Sully" in 1832, that men had found they could send electricity instantly over any known length of wire. From that moment on, Morse devoted most of his time, not to paintings, but to the idea of the electric telegraph.

After many setbacks, and some help from interested friends, the first practical demonstration of his electric telegraph took place on 24 May 1844 when he sent the message "What hath God wrought" on a telegraph line from the Capitol in Washington DC to nearby Baltimore. Morse and his telegraph were known within 12 years throughout North America and Europe. The Morse code was developed and named after him. It was first used over railway wires and later, with the development of "wireless apparatus", over the air.



Its use revolutionised communications at sea, then between continents; its most intensive use was during World War II.

As if acting in union, the Australian media (press, radio and television) buried the use of Morse code on 30 December 1997. The "burial" was caused over the misinterpreted news, that HM Coastguard in Britain will no longer receive messages in Morse. "France and the United States have already stopped listening and Australia and the rest of the world will follow suit in just over a year's time", said the *Sydney Morning Herald*.

What the media did not clarify was that phasing out the use of Morse code as from 1 February 1999 refers to the sending of Morse code distress signals on maritime distress frequencies.

Morse code was, and still is, being replaced as a general communication system in maritime communications with the satellite-assisted Global Marine Distress and Safety System (GMDSS), and with satellite telephone systems.

However, Morse code and its use is not dead, and will never die!

Listen around with the help of a general coverage receiver on any part of the spectrum and you will detect hundreds, even thousands of stations using Morse code, the well known CW signal which will reach any part of the world with a minimum of power when the popular voice communication fails.

The *Sydney Morning Herald*, however, acknowledges that "... in Australia amateur radio operators are among the keenest continuing users" (of Morse code).

Ian Hunt VK5QX, President of the South Australian Division of the WIA, came to the defence of Morse code, as quoted in the *Sydney Morning Herald* and on Sydney commercial radio stations, saying: "If you

are on a sinking ship at sea, and everything is broken, you can still tap two pieces of wire together and send a signal from the transmitter."

Nepal - 9N1NE and 9N1BFI

I have received a telegraphic style of note from Neil VK6NE about his short trip to Nepal accompanied by Joe VK6BFI. Here are the main points:

"We were in Nepal from 14 to 23 December legally licensed at a cost of \$195.00 each to operate on 14 and 21 MHz only (and we complain about our licence costs!). We operated from the QTH of Dick 9N1ARB who is leaving Nepal sometime around March 1998.

"Propagation was patchy with the usual bedlam of calls from Europe on any frequency which we activated. The S meter stayed steady on 20 over 9 from 14200 to 14210 kHz. Joe admonished the Europeans time and time again in Italian, but to no avail. Kathmandu is in a valley at 4500 feet (1371 m) surrounded by hills of 20,000 feet (6096 m). Horizontal polarisation of signals causes them to need a curve upwards to escape the valley (Hi!).

"I visited the Ministry of Tourism and Communications as the President of the WIA and spoke with the top level officers. Unfortunately, the Minister had not returned in time for his appointment with me. However, establishing our credentials with the Ministry, and offering help and aid in the examination area, was well received.

"To obtain an amateur licence in Nepal, after having passed the examination you have to obtain permission from the police, from the military and the Communication Minister. Hopefully, you are in their "good books". We were told that, over a period of time, 47 Nepalese (9N1) callsigns had been heard by the ministry's monitoring system and very few of these were legal.

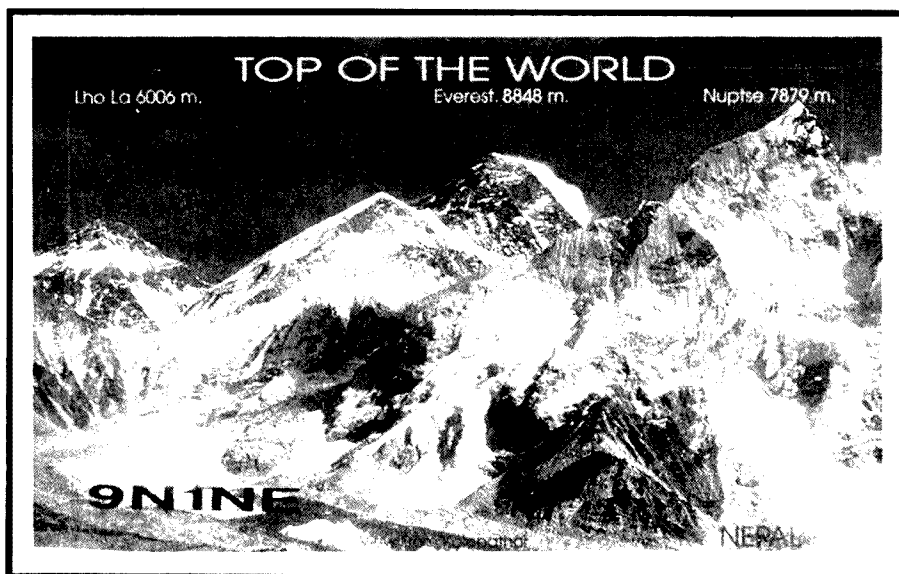
"To help the indigenous local amateurs 9N1AA and 9N1HA, the VK9XZ Island Hoppers Group (to which I belong) has sent a TNC and a 2 m 100 ch unit to them. Import duty is 110% on the value of the radio equipment."

Andaman Islands - VU4 OR VU7?

At the Tenth Regional Conference of the International Amateur Radio Union, Region 3, which was held in Beijing, the capital of the Peoples Republic of China, from 8 to 12 September 1997, each member country had to present a report about the status of the hobby in that country.

I am quoting now from the official report submitted by the Indian delegation:

"We have been receiving numerous enquiries about VU7 operations from Andaman, Nicobar and Lakshadweep Islands. The Government of India, in its



The "Top of the World" QSL card from Noil 9N1NE.

wisdom, does not grant permission for amateur operations from there, based on security considerations. In the past, permission was granted to a few Indian operators to transmit from Port Blair. Such permission is rarely granted to Indian operators, but never to non-Indian DXers.

"Mr P Subramanian VU2JPS, a Government official with the national broadcasting agency, All India Radio, was posted to Port Blair in 1994. After endorsing his licence in December 1994 for operation from his new QTH, the Ministry of Communication was approached by security agencies to withdraw the permission. Accordingly, since May 1998 the operations by VU2JPS from Port Blair cannot be considered as 'authorised' by the administration. Mr Subramanian has, however, never been reported to have used the prefix VU7 for his QSOs."

Bangladesh - S21XX

Exactly one year ago, a German group activated Bangladesh 'the land of the Bangals'. The three members of the group, Dietmar DL3DXX, Joe DL8WPX/YB1AQS and Hannes DL3NEO, arrived at a remote village north of Dhaka, the capital of this 55,598 square metre giant delta, formed by the rivers Ganges and Brahmaputra.

The group aim was to concentrate their activity on the low bands and to operate mainly in the CW mode. The call S21XX was active from 2 to 18 February 1997. A 66 ft (20 m) high, top-loaded vertical antenna was erected with elevated radials, and six other antennas. Power was supplied by a 7 kW generator.

The DXpedition was very successful with 12,839 QSOs on nine bands. The group worked more than 150 countries and made 923 QSOs on 160 metres, 2,552 on 80 metres and 2,924 QSOs on 40 metres. The

bulk of the contacts was on CW (11,756 QSOs) with only 622 SSB and 461 RTTY contacts.

Interestingly, only 213 contacts were made with the Oceania Region, which includes Australia and New Zealand. Dietmar, who worked from the Cocos-Keeling Islands some time ago as VK9CR, and Joe who previously was active as VK9XY, departed to New Guinea on 14 February and were active as P29VXX, while Hannes continued as S21XX until 18 February. Response to the group's effort was positive, judging by the comments made by the DXers scattered around the world, but a good part of the success was attributed to the official help given by the friends from BARL, the Bangladeshi Amateur Radio League.

Spratly Islands 9M0C - AS-051 (IOTA)

A multinational group of DXpeditioners, primarily members of the UK's Chiltern DX Club, the UK DX Foundation, will operate from Layang Layang Island (also known as Swallow Reef) in the Spratly group. The team includes amateurs from the UK, USA, Australia, and East and West Malaysia.

The activity will take place from 12 to 24 February on all bands on SSB, CW, and RTTY, and will include six metres. The team will use a wide selection of mono-band and multi-band antennas, including four square arrays for both 40 and 80 metres. The callsign will be 9M0C. Yaesu offered the use of four FT-1000MPs and two FT-920s.

Proposed frequencies are: SSB - 1845, 3805 (QSX down), 7080, 14195, 18145, 21295, 24945, 28495 and 50145 kHz; CW - 1824, 3502, 7002, 10107, 14022, 18072, 21022, 24892, 28022 and 50102 kHz. All activity will be "split" (up) with the exception of 80 m SSB where the split may



Benfelder Str 4, D-77955. Eltenheim, Germany.

- 7Z1IS - 21 MHz - SSB - 1259 - Dec. QSL via SM0OFG, Charly Chahine, Mellinge 82, S-16364, Spange, Sweden.
- TU2QU - 21 MHz - SSB - 1508 - Dec. QSL to Jean Marie Scotto, Box 925, Abidjan 01, Ivory Coast, Africa.
- EY8MM - 28 MHz - SSB - 0513 - Dec. QSL to Nodir M Tursoon Zadeh, Box 303, 734001, Dushanbe, Tajikistan, Asia.
- Z21AR - 21 MHz - SSB - 1405 - Dec. QSL via Dave R Drummond, PO Box 15, West Nicholson, Zimbabwe, Africa.

From Here There and Everywhere

- Stuart VK8NSB has moved from Darwin to Alice Springs, but his postal address and QSL route is the same as before. Incidentally, Stuart had a good time DXing on 15 and 10 metres. The information about QSOs listed under the sub-section "Interesting QSOs, etc" are all Stuart's contacts.
- Mirek HS0/VK3DXI has reported that he finally received his two licences from the Thai officials, the upgraded full licence and his station licence, together with the tested and approved radio equipment. Expect him now to be on the air from Bangkok until August 1998.
- If you worked Tariq AP2TJ, his QSL manager is W3HNK.
- Eric FT5ZG closed down his station from Amsterdam Island and has gone home.
- Bill VK4UA is very unlucky - he is off the air again. A violent storm has damaged his tower and antenna system for the second time. My sympathy goes to him in his loss and I wish him, as a New Year present, 10 cubic metres of concrete for his new tower base.
- Mike VK6HD advises that he received a letter from Sergio HI8LUZ which also contained a card from a 1991 QSO. Says Sergio: "Sorry for the delay. I have been away from HI-land (Dominican Republic) since 1992. I just found your card. I know that too many QSL cards have been lost. If you know anybody that worked my station and never received my QSL, please tell them to send me another one. I know I have worked at least nine VKs on 80 metres, but I cannot find any QSL cards. I lost my logs when I was transferred from California to Panama. I am currently HPIYHI. I am in the US Army and have callsigns from 11 different countries." In closing Sergio gave two addresses. When he operates in the Dominican Republic he wants the mail to be sent to Sergio A Vazaquez, PO Box 866, Santo Domingo, Dominican Republic. His address in Panama is

also be down to accommodate other regional interests.

On CW it is hoped to contain the pile-up within 5 kHz and on SSB within 20 kHz. QSLs will be available via the Bureau (RSGB) or direct. QSL manager is Phil Whitchurch G3SWH, 21 Dickensons Grove, Congresbury, Bristol, BS19-5HQ, England.

Future DX Activity

- Members of the Czech DX Foundation will be active from various places in the Pacific from 18 February to 1 April.
- Gerard F2JD/HPIXBI is active in Panama until mid-March.
- Cedric HB9HFN and Daniel HB9DLZ will be on the air from Tonga (A35FN and A35LZ), and later from Western Samoa, from 5 to 10 February. Activity mostly on CW. QSLs via home calls via the Bureau.
- A Finn group will activate Guatemala between 18 January to 5 February using the call TG0OH. QSL via OH3JF.
- Antigua V2 will be put on the air by three US operators from 23 February 2 March. Callsigns are not known yet.
- A group of Belgian amateurs will operate from Libya beginning 2 March till possibly 8 March. Callsign will be 5A21PA. QSL via ON4APS.
- Terje JX3EX is still active from Jan Mayen. He can be heard sometimes on the 14226 DX net around 1700. QSL goes to Terje Berg, 8099 Jan Mayen Island, Norway.
- Alain F2HE will be active between 1 to 15 February from Les Saintes Island (Guadeloupe) as FG/F2HE (IOTA NE-114). QSL via F6LQJ.
- Ghaly 5T5TY can be heard after 2000 UTC around 14226 kHz.
- Helios F6IHY is now active on Kerguelen Island under the callsign FT5XN for the next six months. QSL via F6PEN via the Bureau.
- Mirek VK3DXI is on the air until August

as HS0/VK3DXI on CW and SSB on 40 to 10 metres. QSL via DL4DBR.

- Chatham Island ZL7 will be activated by a group of six German amateurs between 23 February and 9 March.
- Andy G4ZVJ will be on the air from 5 February to 1 March as 9G5VU. QSL to home call.
- Eric F5JJK will be on the air from January to May, possibly as TT6M or as TT8AQ, mainly on CW. QSL via F6FNU.
- Harv KE2FB is now active from Phnom Penh as XU2FB. QSL via N4JR.

Interesting QSOs and QSL Information

- TT8JFC - 21 MHz - SSB - 1255 - Dec. QSL via WA4ZJB, Russell W Madison, 812 E Orange St, Apopka, FL-32703, USA.
- 5A2A - 28 MHz - SSB - 1025 - Dec. QSL via DL3KDV, Dieter Voss, Friedrichsthal 21, D-51688, Wipperfuerth, Germany.
- ZD7WRG - 21 MHz - SSB - 1159 - Dec. QSL via WA2JUN, Anthony L D'Ercole, 187 Long Hill Road, Oakland, NJ-07436, USA.
- XT2DP - 21 MHz - SSB - 1208 - Dec. QSL via WB2YQH, Robert E Nadolny, PO Box 73, Springbrook, NY 14140, USA.
- V51HK - 21 MHz - SSB - 1314 - Dec. QSL via DL6OBS, Karl Heinz Koehler, Deister Str 34, D-30974, Wenningsen, Germany.
- 7Q7DX - 21 MHz - SSB - 1432 - Dec. QSL via E R Espindza, Seventh Day Adventist Hospital, c/o PO Makwasa, Malawi, Africa.
- D2AI - 21 MHz - SSB - 1623 - Nov. QSL via CT1EGH, Antonio Pereira, R Guerra Junqueiro 25A, Vale de Milhacos, P-2855, Corroios, Portugal.
- 3XA8DX - 21 MHz - SSB - 1658 - Dec. QSL via DJ9ZB, Franz Langner,

Sergio A Vazaquez, PSC4, Box 6420, APO, FL 34004, USA.



This group represents approx 90% of amateurs in Nepal, which has a population of 20,000,000. The only legal callsign missing was Vlad 9N1FD. From left to right, Neil Penfold 9N1NE (VK6NE), Hari S Shrestha (no callsign), Suresh R Upreti 9N1HA, Satish K Kharel 9N1AA, Richard Wurster 9N1ARB, and Joe Fazio 9N1BFI (VK6BFI). The group was at the QTH of Dick 9N1ARB in Kathmandu. (Photo from Neil VK6NE)

The *Sydney Morning Herald* carried an interesting article recently. It says that three of Australia's wildest and most remote places have been given World Heritage Listings at the meeting of the World Heritage Committee in Naples. The Heard and McDonald Islands group, 4000 km south-west of Perth, and Macquarie Island, 1500 km south-east of Hobart, have been recognised for their outstanding natural and geological values. The Federal Minister for the Environment, Senator Hill, said the Commonwealth would ensure that the Heard and McDonald Islands remained essentially untouched wilderness. Tourist visits are allowed to Macquarie Island, but only under strictly controlled conditions. If you worked Heard Island and Macquarie island in 1997, good on you! If you are waiting for the next DX activity from these DXCC countries, your wait will be a very long one, probably stretching into impossibility as far as Heard Island is concerned.

Frank YJ8AA says his plans to visit outlying northern islands in Vanuatu are at a temporary halt.

The QSL Manager for D2BB is now Joe W3HNK.

Here we go again. Alan VK4AAR informs that Tom VK0ANARE has returned to Australia and has decided to handle his own QSL cards for that operation. He can be reached at: Tom Stokes C/o Simon N Trotter, PO Box 2063, Kambah Village, ACT 2902.

I spoke to Tom VK1TS (formerly VK0TS) shortly after his return from Macquarie. Tom said that in the new group of ANARE personnel there is one amateur with a limited licence. Although his privileges will allow him to operate on 6 and 2 metres, Tom does not know whether this person intends to be active on 6 metres or not. And about those VK0TS QSL cards. Tom says they are on their way, some of them already in the post to the deserving.

ZF2RA cards should be sent to AI K7AR, or under his previous callsign, WA2TMP.

The new QSL manager for R1FJZ is now U3AJ, B A Ermilov, B Serunovskaya 19/37-48, 113093 Moscow, Russia.

Naga City in the Philippines celebrates its 50th birthday with a special call 4G50N until 31 March. QSL goes via DU9RG's new address, Robin U Go, 818 Acacia Ave, Ayala Alabang Village, 1780 Muntinlupa City, Philippines.

The call DU100 will be used during the whole of 1998 to celebrate the Philippines 100th year of Independence.

The correct QSL address of TF3IRA is

direct via the call book address: IARU, Box 1058, IS-121, Reykjavik, Iceland.

It is now official. The new sunspot cycle (23) began in May 1996, almost two years ago.

Portuguese amateurs are allowed to use the following special prefixes between 1 January and 30 September 1998 to celebrate EXPO 98. CT98 (used by CT1, CT2 and CT5 stations); CS98 (CT4); CQ98 (CT3); and CU98 (CU).

Belgian radio amateurs are celebrating the 50th anniversary of their national association by using the special prefix ON50 from 1 January to 31 December. Look for ON50LZ on a variety of hands. QSL via ON7ZT.

The correct QSL Manager for KH0S is JAIOGX.

The special event station 8N0WOG will be on the air soon (from 7 to 22 February) in Nagano, Japan, for the Winter Olympic Games 1998. CW/SSB activity from 160 to 10 metres.

"Zbig" VK2EKY advised that he obtained a licence from the Australian Communication Authority on 23 December which entitles him to use the callsign VK9EKY on Lord Howe island. It seems to me that the Australian authorities have abandoned the concept of the VK9 calls, where the first letter of the suffix designated the DXCC island on which the activity takes place, ie L = Lord Howe Island, N = Norfolk Island, C = Cocos-Keeling Islands, and X = Christmas Islands. Entries on page 99 and 100 of the 1998 Australian Call Book are proof of this, including the entry of our "famous" Vlad VK9XL (see June 97 and October 97 issues of *Amateur Radio*).

Did Vlad renew his licence? How? Who paid for it? Did he renew it from Russia? I was told that his "American" address is not his address at all. The mystery deepens!

"Zbig" - Frank - VK2EKY says that he will visit Lord Howe island on occasions in the future but, by the time you read this, he is probably already in Japan using the callsign 7J6AAK/2. He intends to print the VK9EKY cards in Japan, and he can be contacted for direct QSLing at: Frank Z Murdzia, Shijimizuka-3-8-41, Hamamatsu-City, Shizouka-Ken, 432 Japan. Or send your card via 7J6AAK/2 via the Japan JARL QSL bureau. QSLing to the VK9/VK0 Bureau will give you negative results and QSLing via VK2EKY will result in long delays.

QSLs Received

KD7P/NH7 (8 w - op); ET3BN (6 w - DL1JRC); TT8KM (3 w - F6FNU); VP2EST (3 w - KT8Y); 5B4AGC (3 W - Box 1344, Paphos, CY 1833, Cyprus); UK81WW (2 m - Box 10, Samarkand, 703048, Uzbekistan, Asia).

Thank You

Many thanks to all those who supplied me with news and other information. Special thanks to: VK1TS, VK2XH, VK2EFY, VK2EJM, VK2EKY, VK2KFU, VK2TJF, VK4AAR, VK5WO, VK6HD, VK6NE, VK8NSB, VK0TS, DL3NE, G3XTT, YJ8AA, and the publications, *Sydney Morning Herald*, *World Book Encyclopaedia*, *QRZ DX*, *The DX News Sheet* and *425 DX News*.

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Contests

Peter Nesbit VK3APN

Federal Contests Co-ordinator
PO Box 2175, Caulfield Junction, VIC 3161
pnesbit@melbpc.org.au

Contest Comments

As I write this, the Ross Hull VHF/UHF Contest is in full swing. There is some divergence of opinion regarding the re-introduction of 6 m, and I have already received some correspondence on the issue, which has been forwarded to the manager concerned (John VK3KWA).

To clear up any misconceptions, the day-to-day running of WIA contests is always handled by the relevant manager, and comments regarding our contests should ideally be directed to them in the first instance. Although entrants are always welcome to contact me regarding any aspects of contests, a more timely response is usually obtained by going directly to the manager, unless there is some irreconcilable difference (which is, fortunately, rare).

I was going to talk about weak signal work, but time and space have run out, so it will have to wait. For information this month, thanks to VK4NEF, G4BUO, OE4BKU, CQ-Contest, DARC, NZART, and SRR. Until next month, good contesting!

Peter VK3APN

Jock White National Field Day (NZART)

0300-1200z Sat 21 Feb &
1800-0300z Sun 22 Feb

This contest is open to portable ZL stations, and also to overseas stations. Both 80 and 40 m can be used, phone and CW. Cross-mode contacts are not permitted. Sections include: CW; phone; mixed mode; 80 m only; "natural" power; QRP max 5 W O/P. Exchange RS(T) plus serial number. ZLs will add their branch number.

This contest is divided into 18 one-hour periods, changing over on the hour. Stations can be contacted once per hourly period, per mode, per band. Note that two consecutive QSOs with the same station are not permitted under the following circumstances, unless five minutes have elapsed: (a) when changing modes but staying on the same band; (b) at the end of one period and the start of the next.

Contest Calendar February - April 1998

Feb 7-8	YU DX Contest	
Feb 14	Asia-Pacific CW Sprint	(Jan 98)
Feb 14-15	ARRL DX CW Contest	(Jan 98)
Feb 14-15	PACC CW/SSB DX Contest	(Jan 98)
Feb 20-22	CQ 160 Metre SSB Contest	(Dec 97)
Feb 21-22	RSGB 7 MHz CW Contest	(Jan 98)
Feb 21-22	Jock White National Field Day	
Feb 21-22	REF (France) SSB DX Contest	
Feb 21-22	UBA (Belgium) CW DX Contest	
Feb 22	High Speed Club CW Contest	(Jan 98)
Mar 7-8	ARRL DX SSB Contest	(Jan 98)
Mar 8	DARC 10 m Digital Contest	
Mar 14-15	Commonwealth Contest (CW)	
Mar 21-22	WIA John Moyle Field Day	
Mar 21-22	Russian DX Contest	
Mar 21-22	DARC HF SSTV Contest	
Mar 21-22	Bermuda Contest	
Mar 28-29	CQ WPX SSB Contest	
Apr 4-5	SP DX Contest	
Apr 10-12	JA DX High Band CW	
Apr 11-12	International HF Grid Square Contest	
Apr 11-12	EA DX Contest	
Apr 18-19	SARTG AMTOR Contest	
Apr 18-19	Holyland DX Contest	
Apr 25-26	Helvetia DX Contest (Switzerland)	
Apr 25-26	SP RTTY Contest	

Score 10 points per QSO, and multiply by the total number of branches worked on phone and CW. Multipliers are counted separately on 80 and 40 m, and on phone and CW, ie the same multiplier can be counted up to four times.

The summary sheet should show all usual details, plus a summary of the QSOs and multipliers per band and mode. Send logs to: S White ZL2AHC, 19 Rosspoint Street, Johnsonville, Wellington, New Zealand to arrive by 27 March 1998.

DARC 10 m Digital Contest "Corona"

1100-1700z Sunday, 8 March 1998

This contest is organised by DARC to increase interest in all digital modes, and takes place on the first full weekend of March, July, September and November each year. Only 28 MHz is used, and sections include Single Operator and SWL.

Modes are RTTY (Baudot), AMTOR, PACTOR, and CLOVER. Call "CQ CORONA TEST", and exchange RST and QSO number starting with 001. Additional contacts may be made with the same stations if a different mode is used. Score one point per completed valid QSO, and multiply by the number of DXCC/WAE countries plus call-areas of JA, W, and VE. Separate logs are requested for each mode, and should contain Date, Mode, Time UTC, Callsign, Message Sent and Received, Points and Multipliers. Send logs postmarked within four weeks to: Werner Ludwig DF5BX, PO Box D-49110, Georgsmarienhutte, Germany.

1998 Commonwealth Contest

1200z Sat to 1200z Sun, 14/15 March

The Commonwealth Contest promotes contacts between stations in the Commonwealth

and Mandated Territories, and runs on the second full weekend in March each year. It is open to single operators only, and sections are: Open (no limit on operating time), and Restricted (operation limited to 12 hours; off periods must be clearly marked and at least one hour each; at least four hours operation must take place after 0000z on 15 March 1998).

Entrants should operate in the lower 30 kHz of each band, except when contacting Novice stations operating above 21030 and 28030 kHz. Exchange RST plus serial number. Any station using a Commonwealth Call Area prefix can be worked, except those within the entrant's own call area. Note that for this contest, the entire UK counts as ONE call area.

Score five points per valid QSO, plus a bonus of 20 points for each of the first three contacts with each Commonwealth Call Area, on each band.

A number of Commonwealth Society HQ stations will be active during the contest, and will send 'HQ' after their serial number to identify themselves. Every HQ station counts as an additional call area, and entrants can contact their own HQ station for points and bonuses.

Separate logs and lists of bonuses claimed are required for each band. Entries must be accompanied by a summary sheet indicating the section entered, and the scores claimed on each band. Send logs postmarked by 7 April 1998 to: RSGB HF Contests Committee, c/o S V Knowles G3UFY, 77 Bensham Manor Road, Thornton Heath, Surrey, CR7 7AF, UK.

The Senior and Junior Rose Bowls will be awarded to the leaders of the Open and Restricted sections respectively, and Certificates of Merit to the runners-up and the leading stations in each

Call Area. A Commonwealth Medal may be awarded to the entrant in either section who, in the opinion of the HF Contest Committee, has most improved his or her score, or contributed significantly to the contest over the years.

To encourage activity on as many bands as possible, a special 61st Anniversary Certificate will be awarded to every entrant who contacts more than 61 Band-Call Areas in the 1998 contest. For example; VP9 worked on three different bands counts as three Band-Call Areas. Entrants are asked to note their claimed Band-Call Area total on the Summary Sheet.

Results of the 1997 contest will appear next month.

Commonwealth Call Areas are:
3B6 3B8 3B9 3DA 4S 5B 5H 5N 5W 5X 5Z 6Y
7P 7Q 8P 8Q 8R 9G 9H 9J 9L 9M 9O 9M6/8
9V 9Y A2 A3 AP C2 C5 C6 C9 CY0 CY9
G/GB/GD/GI/GJ/GM/GU/GW (all one area) H4
J3 J6 J7 J8 P2 S2 S7 T2 T30 T31 T32 T33 TJ V3
(Antigua, Barbuda) V3 (Belize) V4 V5 V8 VE1
VE2 VE3 VE4 VE5 VE6 VE7 VE8 VE9 VK0
(Heard) VK0 (Macquarie) VK1 VK2 VK3 VK4
VK5 VK6 VK7 VK8 VK9C VK9L VK9M VK9N
VK9W VK9X VO1 VO2 VP2E VP2M VP2V
VP5 VP8 (Antarctica) VP8 (Falkland) VP8 (S.
Georgia) VP8 (S. Sandwich) VP8 (S. Shetland)
VP8 (S. Orkney) VP9 VQ9 VR6 VU VU4 VU7
VY1 VY2 YJ Z2 ZB2 ZC4 ZD7 ZD8 (Tristan de
Cunha) ZD8 (Ascension) ZF ZK1 (N. Cook) ZK1
(S. Cook) ZK2 ZK3 ZL0 & /ZL (Reciprocal) ZL1
ZL2 ZL3 ZL4 ZL7 ZL8 ZL9 ZS1 ZS2 ZS4 ZS5
ZS6 ZS8 GB5CC (RSGB HQ) (various other
HQ).

1998 Russian DX Contest

1200z Sat - 1200z Sun, 21/22 Mar

This contest is scheduled for the third full weekend of March each year. Sections include Single Operator; CW, Phone or Mixed: Single or all bands. Modes are SSB and CW, and bands are 160-10 m.

Exchange RS(T) + serial number starting with 001. Russian stations will send RS(T) + two letter "Oblast" code (max 88 + 3 on each band). Score 10 points per Russian QSO, five points for QSOs with stations on another continent, three points for stations in the same continent, and two points with your own country. Continent is as per WAC.

Multiply the total QSO points by the number of DXCC countries and Russian "Oblasts" worked on each band. Use a separate log for each band, and send logs and summary sheets postmarked within four weeks to: Contest Committee SRR", PO Box 59, 105122 Moscow, Russia.

Oblast designators are:

AB ADALAMAO AR BA BO BR BU CB CK
CN CT CU DA EA EW GA HA HK HM IR IV JA
JN KA KB KC KE KG KI KJ KK KL KM KN KO
KP KR KS KT KU L O LP MA MD MG MO MR
MU NN NO NS NV OB OM OR PE PK PM PS
RA RO SA SL ST SM SO SP SR SV TA TB TL
TM TN TO TU TV UD UL UO VL VG VO VR
YA.

DARC International HF SSTV Contest

1200z Sat to 1200z Sun, 21/22 Mar

This DARC contest is open to amateurs world-wide, to increase interest in SSTV. It is scheduled

for the third full weekend in March each year. Bands are 80-10 m (excluding 10, 18, 24 MHz). Sections include Single Operator, and SWL. All contacts must use two-way SSTV.

Call "CQ SSTV TEST", and exchange report and QSO number starting with 001. Score one point per completed QSO, and multiply by the number of DXCC/WAE countries worked plus call-areas of JA, W, and VE. Send your log postmarked within four weeks to "Werner Ludwig DF5BX, PO Box D-49110, Georgsmarienhuetten, Germany"

Bermuda WW Contest

0001z Sat to 2359z Sun, 21/22 Mar

This contest runs on the third full weekend in March, and is open to all amateurs. Actual operating time must not exceed 24 hours. Off periods must be at least two hours. Use phone and CW on 80, 40, 20, 15, 10 m only.

Exchange RS(T) only, and claim five points per QSO. The final score is the total QSO points on all bands, times the number of countries worked on each band, times the number of VP9 contacts on each band.

The top score world-wide shall receive an engraved trophy which shall be mailed to them unless they choose to collect it in person at the Annual Banquet in October. Transportation to Bermuda will be provided by the Bermuda Department of Tourism, and accommodation will be provided by the Palmetto Bay Hotel. The top score for each country shall receive a certificate, provided a minimum of 100 contacts is made, including at least three different VP9 call signs.

Logs, duplicate and summary sheets must be clearly labelled with the operator's callsign and date (including year) and, where appropriate, band and mode. Logs must be received by 1 June, at: Radio Society of Bermuda, Contest Manager, PO Box HM 275, Hamilton HM AX, Bermuda.

CQ WPX Contest

SSB: 0000z Sat to 2400z Sun, 28-29 March

CW: 0000z Sat to 2400z Sun, 30-31 May

This contest is sponsored by *CQ Magazine*, and the objective is to contact as many stations world-wide as possible on 1.8-30 MHz (except 10, 18 & 24 MHz). Categories include: single operator (either single or all band), subdivided according to power (unrestricted, low power max 100W O/P, and QRPp max 5 W O/P); and multi-operator (either single or multi-transmitter, all band only). Single operator stations are where one person performs all operating, logging, and spotting functions. Note: Single operators may operate for only 36 of the 48 hours. Off periods must be at least one hour long, and clearly marked in the log. No time limits apply to multi-operator stations.

Multi-multi stations must have all transmitters located within a 500 m diameter circle or within the property limits of the licensee's address, whichever is greater. All antennas must be physically connected by wires to the station transmitters and receivers.

Exchange RS(T) plus a three digit number starting at 001. Continue to four digits if past 1000. Multi-transmitter stations must use separate numbers for each band. Score three points (20/15/10 m) or six points (160/80/40 m) for

contacts with stations on different WAC continents, and one point (20/15/20 m) or two points (160/80/40 m) for contacts with stations within the same WAC boundary. Contacts with stations in the same country are permitted for multiplier credit but have zero point value.

The multiplier is the total number of prefixes worked on all bands (each prefix is counted only once regardless of the number of different bands on which it is worked). A "prefix" is the unique letter/numeral combination forming either the first part of the callsign, or else the normal country identifier for stations using their home callsigns in another DXCC country. For example: N8, W8, WD8, HG1, HG19, KC2, OE2, OE25 are all separate prefixes. The prefix for both N8BQJ/KH9 and KH9/N8BQJ is KH9. KH6XXX operating from Ohio could sign /W8, /N8, /K8, or any other prefix authorised for that district. Portable designators without numbers will be assigned zero after the letter prefix, eg N8BQJ/PA becomes N8BQJ/PA0. Any calls without numbers will be assigned a zero after the first two letters, eg RAEM becomes RAOEM. Suffixes indicating maritime mobile, mobile, portable, alternate location, and licence class do not count as prefixes (eg /MM, /M, /P, /A, /E, /J). The final score is QSO points x multiplier.

Logs must show times in GMT, with breaks clearly marked. Show prefix multipliers only the first time they are worked. Logs must be checked for duplicates, correct points, and prefix multipliers. Logs must be accompanied by a sorted alphanumeric list of prefix multipliers, and a summary sheet showing call, name, address, category, power, scoring information, and a signed declaration that all contest rules and radio regulations were observed.

Disk submission of logs is encouraged. CT's *.BIN file or *.ALL file, N6TR's *.DAT file, NA's *.QDF file, or *.DBF files are preferred. An ASCII file containing all required information is also acceptable. Disk files must be in chronological order for single operator and multi-single stations, and chronological by band for multi-multi stations. Please label your disks and name your files with the call used (example: N8BQJ.BIN or N8BQJ.DAT). Disks will be required from top scoring stations if requested.

Alternatively, logs may also be submitted via e-mail to SDB@ag9v.ampr.org or N8BQJ@erinet.com. Binary files may be sent providing they are in MIME or UUENCODE format. Internet submissions will also require a summary sheet and prefix multiplier sheet. Logs received via e-mail will be confirmed via e-mail upon receipt.

Send logs no later than 8 May (SSB) or 10 July (CW) as above, or to: WPX Contest, 76 N Broadway, Hicksville, NY 11801, USA. Indicate SSB or CW on envelope.

A comprehensive range of trophies and plaques is offered, and certificates will be awarded to the highest scoring station in each category, country and VK call area. To be eligible for awards, single operator stations must show at least 12 hours operation, and multi-operator at least 24 hours operation. Single band entries, showing points claimed for more than one band will be judged as multi-band unless otherwise

specified. Where returns justify, 2nd and 3rd place awards will also be made.

1998 John Moyle Contest

Presented by Eric Fittock, VK4NEF.

Well, once again those who enjoy a weekend in the bush should be planning for this year's John Moyle Field Day. Although basically the same as last year, some minor changes have been made, so I suggest you read the rules carefully.

In particular, the contest is now split into eight three-hour blocks which start and finish on the hour. This will make it much easier when making repeat QSOs, as operators will no longer need to keep track of the time elapsed since working each station. Another change is to allow logs to be forwarded by e-mail, bringing this contest into line with many other contests, and making things easier for entrants.

If anyone wishes to contact me privately to discuss rules, etc. my home phone number is 07 3395 5327, and my address is as shown in the Log Submission section below. I wish all entrants good luck, and look forward to seeing you on air during the contest!

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.

2. The contest takes place on the third full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 21-22 March 1998.

3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.

4. Single operator portable entries shall consist of one choice from each of the following:

- 24 or 6 hour;
- Phone, CW, or Open mode;
- HF, VHF/UHF, or All Band.

5. Multi-operator portable entries shall be Open mode, and consist of one choice from each of the following:

- 24 or 6 hour;
- HF, VHF/UHF or All Band.

6. Home and SWL entries may be either 24 hour or six hours. Open mode, all band.

Scoring

7. Portable HF stations shall score two points per QSO.

8. Portable stations shall score the following on 6 m:

- 0-49 km, two points per QSO;
- 50-99 km, 10 points per QSO;
- 100-149 km 20 points per QSO;
- 150-199 km 30 points per QSO;
- 200-499 km 50 points per QSO;
- 500 km and greater, two points per QSO.

9. Portable stations shall score the following on 144 MHz and higher:

- 0 to 49 km, two points per QSO;
- 50 to 99 km, 10 points per QSO;
- 100 to 149 km, 20 points per QSO;
- 150 km and greater, 30 points per QSO.

10. For each VHF/UHF QSO where more than

two points is claimed, either the latitude and longitude of the station contacted or other satisfactory proof of distance must be supplied.

11. Home stations shall score:

a. Two points per QSO with each portable station;

b. One point per QSO with other home stations.

Log Submission

12. Logs must be accompanied by a summary sheet showing: callsign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, equipment used, and a signed declaration stating "I hereby certify that this station was operated in accordance with the rules and spirit of the contest". For multi-operator stations, the names and callsigns of all operators must be listed.

13. Logs must be sent no later than 27 April 1998, and addressed to: John Moyle Contest Manager, 134 Apollo Rd. Bulimba, QLD 4171, Australia. An ASCII text copy on a 3.5" or 5.25" MS-DOS diskette would also be most helpful (eg for CT, the CALLSIGN.ALL file). Alternatively, for 1998 only, logs may be forwarded by e-mail to: pnesbit@melbpc.org.au (for the 1999 and later contests, check the rules for the e-mail address which is current at the time). Logs sent by e-mail must include a summary sheet and declaration, but the operator's name is acceptable in lieu of a signature.

Certificates and Trophy

14. Certificates will be awarded to the leading stations in each section. Additional certificates may be awarded where operation merits it. Note



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Okay, so we don't use \$20 notes like those any more, but the photo certainly shows just how tiny the remote control head for Icom's new IC-207H dual-band VHF/UHF FM transceiver is. We feature a full review of this new budget powerhouse this month. Can a really low price offset 'one band at a time' operation?

February's R&C has lots of great features aimed specifically at amateur radio operators. Check these out...

- CONSTRUCTION: Hank, VK5JAZ tells how to build a simple dummy load. Every shack should have one!
- ANTENNAS: Steve, VK6VZ, adapts some VHF designs for use at HF... with really fascinating results.
- REVIEW: Icom IC-207H. Using one receiver and one transmitter for two bands cuts costs. Does it go?
- PEDESTRIAN MOBILE: Peter, VK1PK, goes ped mobile — on 10 metres using a modded CB! Here's how.
- SAREX FOR BEGINNERS: confused by all the satellite terms and don't know where to tune? Look here.
- As usual, we have our three DX columns, mods and more... the best stories and regulars every month!

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v3ce

that entrants in a 24 hour section are ineligible for awards in a six hour section.

15. The Australian station with the highest CW score will be awarded the President's Cup, a perpetual trophy held at the Executive Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

16. General WIA contest disqualification criteria, as published in Amateur Radio from time to time, applies to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

17. A portable station comprises field equipment operating from a power source, eg batteries, portable generator, solar power, wind power, independent of any permanent facilities.

18. All equipment comprising the portable station must be located within an 800 m diameter circle.

19. A single operator station is where one person performs all operating, logging, and spotting functions.

20. A single operator may only use a callsign of which he/she is the official holder. A single operator may not use a callsign belonging to any group, club or organisation for which he/she is a sponsor except as part of a multi-operator entry.

21. A multi-operator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.

22. A multi-operator station may use only one callsign during the contest.

23. Multi-operator stations may only use one

transmitter on a given band at any one time, regardless of the mode in use.

24. Multi-operator stations must use a separate log for each band.

25. A station operated by a club, group, or organisation will be considered to be multi-operator by default.

26. None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.

27. Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. The practice of clubs or groups providing massive logistic support to a single operator is, however, totally against the spirit of the contest. Offenders will be disqualified and, at the discretion of the manager, may be banned from further participation in the contest for a period of up to three years.

28. Phone includes SSB, AM and FM.

29. CW includes CW, RTTY, and packet.

30. It is not expected that any other modes will be used in the contest, but if they are, they shall be classed as CW.

31. All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz. Note: On 6 m, the region below 50.150 MHz has been declared a contest-free zone, and contest CQs and exchanges may only take place above this frequency. Stations violating this rule will be disqualified.

32. Cross-band, cross-mode and contacts made via repeaters are not permitted for contest credit. However, repeaters may be used to arrange a

contact on another frequency, providing a repeater is not used for the actual contact.

33. (Note revised rule). Stations may make repeat contacts, and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 01-04, 04-07, 07-10, 10-13, 13-16, 16-19, 19-22, 22-01 UTC. Repeat contacts can be made anywhere in these three hour blocks, providing they are not consecutive or are separated by at least five minutes.

34. Stations must exchange ciphers comprising RS(T) plus a three digit number commencing at 001 and incrementing by one for each contact.

36. Portable stations must indicate that they are portable when sending their callsigns, and to avoid confusion with home stations operating in another state, must follow their cipher with the letter "P", eg 59001P.

37. Multi-operator stations should keep a separate log for each band, and commence each band with 001.

38. Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.

39. For six-hour stations, the practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation must commence with the first contact on any band or mode, and finish six hours later.

ar

I hope one of your New Year resolutions is to increase your surveillance of the amateur bands for those ever-present intruders.

The ACA at Quoin Ridge have supplied me with some interesting observations regarding locations of some long standing intruders. However, I would like amateurs to keep an ear open on the following frequencies:

1. 7.036 MHz, a six channel data transmission, location 39 degrees 31 minutes North, 116 degrees 36 minutes East near the Chinese city of Jianjin, bearing 347 degrees from Darwin and 333 degrees from Brisbane - heard at 1152 UTC on 27 December 1997.

2. 7.085 MHz, UiBC station using A3E (AM), located by cross bearings from Brisbane (271 degrees) and Darwin (285 degrees) placing it in the Sudan at or near Omdurman (Latitude 17 degrees 31 minutes, Longitude 27 degrees 55 minutes).

3. 7.105 MHz, UiJAM (jammer) using F3, spreading from 7.095 to 7.115 MHz, bearing 332 degrees from Brisbane and 348 degrees from Darwin indicating it is near the mouth of the Yellow River in China - heard at 1209 UTC on 28 December 1998.

International Amateur Radio Union Monitoring Service (IARUMS) - Intruder Watch

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I would urge all amateurs to do some serious listening to 40 metres as this band is by far the most interfered with by illegitimate transmissions of all types. Information such as place names and call signs may be hard to catch if the language is foreign, but be patient at all times!

I would also advise a relaxation of logging R7B and B9W modes and beacon signals, along with Russian Naval Station signals.

There is very little chance at present of removing those long standing pests RDL and UMS! Time could be spent more profitably on other frequencies.

I have not taken leave of my senses, but 40 metres is one of the more popular operating frequencies as well as being one of the smallest in primary service, only 7.000 to 7.100 MHz. The other bands will be looked at in turn.

ar

Power Line Noise

Conditions of late have picked up, especially from 0700 UTC onwards. However, signals have been noticeably absent around our local lunchtime. Sometimes Asian and African signals propagate into south-eastern Australia from the north. Yet all we seem to be hearing is plenty of noise, particularly from power lines. The long hot dry summer has certainly made the power noise increase significantly. Well known Melbourne DXer, Bob Padula, wrote in edition 73 of the *Electronics DX Press (EDXP)* wondering if it indeed is part of the "El Nino" phenomenon.

He comments: "One effect of this very long dry spell is the horrendous build-up of RF Radiation from the national power grid. Melbourne is serviced from the main power station at Yallourn, some 150 km to the east, via 600,000 volt transmission lines. This is then converted into 6,600 volt feeders to service the suburban area, which in turn is transformed down into the usual 415 volt three-phase system, then distributed into our residences in single-phase 240 volt AC. The 6,600/240 volt transformers are usually pole-mounted.

"RF radiation from the whole grid is terrible - the local power company refers to their transmission lines as 'antennas' and they certainly do a very good job of radiating very high levels of line noise, particularly the 600,000 volt and 6,600 volt networks. In times of low rainfall, build-up of dust and dirt on all elements of the grid contributes to excessive leakage and harmonic radiation (derived from the fundamental 50 Hertz)."

This is depressingly similar to many hams and SWLs world-wide. I also get power line noise here when the lines get very dry, but it is particularly noticeable when it is windy. A faulty insulator or two can really cause havoc. Fortunately, when night comes and the evening dew sets in, it does quieten down somewhat.

Here in Tasmania, a political controversy has surfaced around proposals to privatise the electricity grid as they have done in Victoria. The Labour opposition has brought up horror stories of what has allegedly happened since the SEC was abolished and the grid broken up. Is the increase in power line noise attributable to the privatisation and reduction in the maintenance staff? Bob Padula maintains that line noise has significantly increased of late in Victoria.

He has also tried to get away from power line noise by going to remote locations, yet it is still present. He also says that RF noise from the street power lines is being re-radiated from all metal objects close to the

Spotlight on SWLing

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house. Noise and hash is being radiated quite a distance away from the nearest line.

Fortunately, I haven't had noise problems as bad as some have been having in Melbourne. It has been fairly dry and a good drop of rain can clean up the lines for a while. I do remember being down at a holiday home at Weymouth a number of year back and there was always a perpetual hash caused by salt spray and dust being present on the insulators. A rain shower would reduce it for a short while. The power lines were also very close to the house. Yet when the supply failed, tuning around on a battery portable was very different.

Moscow Cuts Back Short-wave

The Voice of Russia World Service dramatically reduced its English output, from 24 to 16 hours, as from 1 January. Budget cutbacks have forced this scaling back of Moscow's World Service.

All target areas have been affected, with Australasia having one hour cut from their service. There is no English programming between 1000 and 1400, as well as 2200 till 0200. Other European language sections also have been reduced, but not as dramatically as English. This is indeed a far cry from when it was so easy to find Moscow on a multitude of frequencies. Now it is difficult finding them at all.

Another Language Goes

The BBC external services axed Finnish on 31 December 1997, after 57 years of broadcasting in that Scandinavian language.

In the final year of Finnish language broadcasting, an agreement was reached whereby local relays were provided in the Helsinki metropolitan region, but it is the Foreign Office, and not the BBC, which determines what language is broadcast.

End Of An Era?

There was quite a deal of publicity around New Year's Day about the disappearance of

CW from the maritime radio service, in both the print and electronic media. The publicity revolved around the end of CW on 500 kHz, particularly in Britain. This frequency was the main calling and emergency channel from the earliest days of radio until now. However, despite the closure of the English coastal MF stations after 90 years, and the phasing out of SOS, guess what happened? Yes, a CW emergency beacon was activated in the rough seas off the UK!

MF and CW, in particular, have been replaced with satellite technology and GMDSS. However, some old hands are maintaining that it is too dangerous relying solely on satellites as they can break down or become overloaded with traffic. Late last year, the Americans apparently perfected a system to destroy satellites from the ground using laser beams.

However, CW has not disappeared completely as there are still plenty of stations on HF. An American corporation has been buying up some of the old stations or leasing them as part of a world-wide communications system. Globe Wireless in California has about a dozen stations as part of their world-wide chain, including VIP Perth Radio.

Packet Address

You will have noticed that I have included this once more since recently reconnecting my modem after some problems with my computer. My address is *VK7RH@VK7BBS@LTN.TAS.AUS.OC*.

Well, that is all for this month. Keep up listening despite all the hassles of AC line noise and other nasties caused by other man-made electronic devices. There is still plenty to hear. ar

Silent Keys

Due to space demands obituaries should be no longer than 200 words.

The WIA regrets to announce the recent passing of:-
 R J (Raymond John) BATY VK2BT
 A E (Albert Edward) WILLIAMS VK5BO
 J R WALTER VK6RG ar

Ten Metre Activity

Recently I spent a few hours, spread over a couple of days, tuning through the 10 metre band. I heard several IBP beacons on 28.200 and Australian beacons between 28.260 and 28.270 MHz. Further up the band, I logged 13 SSB stations up to 29 MHz. Above 29 MHz, I heard several FM simplex stations and some activity on two repeaters.

Against this, I recorded the number of different frequencies where I heard pirates. The total was 26 frequencies below 29 MHz (mostly AM), and five frequencies above 29 MHz (mostly SSB). Most of the pirates were speaking Indonesian, but I heard some who were obviously Australians. Most pirate activity was below 28.4 MHz, but there were some very busy frequencies between 28.6 and 28.7 MHz.

Now that the band is opening, we should be using it as much as possible - especially the part below 29 MHz, which is where most of the pirates are. We may not be able to do much about the Indonesians, but at least we can discourage Australian pirates from filling the band in the same way.

Call Book Beacon Lists

I received some information on New Zealand beacons just after the Call Book went to press.

The Mt Climie beacon ZL2MHF, on 28.230 and 52.510 MHz, is QRT after many years of service.

Delete ZL3MHF: it has been replaced by ZL3SIX on 50.040 MHz.

Several 2 metre beacons have moved to new frequencies - they are ZL1VHF 144.240; ZL1VHW 144.256; ZL2UHF 144.275; and ZL3VHF 144.285 MHz.

There is also a new beacon in Manawatu on 144.271 MHz; no details of callsign but I assume it is ZL2VIIM.

There are also some changes on 70 cm and 23 cm: ZL1UHF 432.240 and 1296.240; ZL1VHW 432.256; ZL2VHT 1296.267; ZL2UHF 432.275 and 1296.275; and ZL3UHF 432.285.

There are also two changes to the Australian beacon list:

Add VK6REP at Esperance (OF66) on 144.568 MHz, power 15 W, mode FSK, antenna an east-west dipole.

Delete VK3RAI on 432.450 MHz: it is QRT and will be moved to a new site in eastern Victoria.

Six Metre Calling Frequencies

The other day I heard an amateur calling CQ on 50.110 MHz. A voice appeared and told him to get off the international DX calling frequency. No callsign, no please or thank you; definitely not the way to encourage co-operation.

FTAC Notes

John Martin VK3KWA

Chairman,
Federal Technical Advisory Committee
PO Box 2175
Caulfield Junction, VIC 3161

The 50.200 MHz domestic calling frequency was adopted very recently and many amateurs may not be aware of it yet. Operating habits do not change overnight, and the best way to speed up the process is to be reasonably diplomatic about it.

UHF Link Frequencies

Two suggestions have been made for minor changes to the 70 cm and 23 cm band

plans, to make better provision for links using wide offsets or wide bandwidths.

High speed data links may need a channel spacing of around 100 kHz, and there can be problems in finding suitable frequencies if the link segments are dotted right through with links on 25 kHz channel spacing. One solution is to reserve part of the link segments - say 422 - 423 and 442 - 443 MHz - for links with 100 kHz channel spacing.

On the 23 cm band, there are four link segments, each 1 MHz wide: 1240/1259 MHz and 1272/1292 MHz. One possibility would be to use the lower 500 kHz of each of these segments for 25 kHz spaced links, and use the upper half for 100 kHz channelling - for example, 1240.6, 1240.7, 1240.8 and 1240.9 MHz.

Some 1200 MHz link equipment is designed for wider offsets than the 19 or 20 MHz split between our link segments. In this case there should be no problem in going to wider offset by using 1240/1272 MHz (for a 32 MHz split), 1259/1292 MHz (33 MHz split), or 1240/1292 MHz (52 MHz split).

Any comments? If there are no objections, these suggestions can be incorporated in the band plans. ar

WIA News

Radio Amateur Co-founder of Sony SK

Masura Ibuka, the co-founder of the world-renowned Sony Corporation, died in Tokyo on 19 December 1997, aged 89. Born 11 April 1908, Ibuka was responsible for introducing the then-new transistor technology to Japan, from America, in 1952.

As a young man, Ibuka was an enthusiastic radio amateur, which led him to study electrical engineering at the Waseda University, where he graduated in 1933.

Ibuka and Akio Morita founded a company in 1946, which was later to become Sony, to make magnetic audio tape recorders. In 1952, Ibuka visited the US and saw the potential of the transistors being marketed by Western Electric. In the US at the time, applications for transistors were principally seen as being for military equipment and hearing aids.

At Ibuka's suggestion, Morita invested \$US25,000 for the rights to make transistors in Japan.

Ibuka and a team of engineers at the fledgling company set about refining the manufacturing process for transistors over the next few years. They had their eye on the market for portable, battery-powered consumer products. They launched their

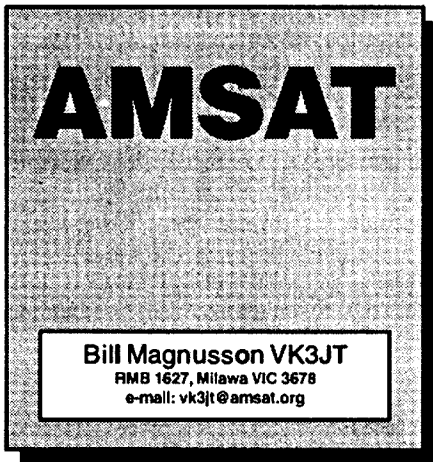
first transistor radio in 1955 under the Sony brand. In 1957, Sony topped this with a 'pocket-sized' radio - although Sony had to issue their salesman with shirts having extra-large pockets in which to slip their demo models.

The rest is history. Sony is also famous for introducing a new word to the English language - 'Walkman', for the now ubiquitous pocket-sized audio cassette player.

Ibuka's technical leadership saw Sony launch the world's first transistor TV set in 1959 and the first solid-state videotape recorder in 1961. Under Ibuka's and Morita's leadership, Sony has been credited with transforming Japan's electronics industry from suppliers of low-cost and reliable derivatives of Western products, to makers of distinctive consumer goods - typified by the Walkman.

Ibuka became chairman of Sony in 1971, retiring in 1976. He set up the Sony Fund for Education to promote science in Japanese schools and in 1978 was admitted to the Order of the Sacred Treasure, First Class. In 1989 the Ministry of Education designated him a Person of Cultural Merits and in 1992, the Japanese Emperor made him a member of the Order of Culture. [Released 13/1/98]

National co-ordinator
Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org
AMSAT Australia net:
Control station VK5AGR
Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.
Frequencies (again depending on propagation conditions):
Primary 7.068 MHz (usually during summer).
Secondary 3.685 MHz (usually during winter).
Frequencies +/- QRM.
AMSAT Australia newsletter and software service
The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:
AMSAT Australia
GPO Box 2141
Adelaide SA 5001
Keplerian Elements
Current keys are available from the Internet by accessing the AMSAT FTP site, [ftp.amsat.org](ftp://ftp.amsat.org) and following the sub-directories to "KEPS".



Frequency - 401.5 MHz; Modulation FSK @ 192000 BPS.

At the time of writing, Keplerian elements for EARTHWATCH are being included in the current NASA sets issued for radio amateur use. Rex would like as many amateurs as possible to listen for a signal on that frequency that may be coming from EARTHWATCH. A typical 70 cm long CP Yagi, as used by most satellite stations, should be sufficient. When last heard, EARTHWATCH was sending short bursts of high speed data. If you hear anything of this lost satellite, please communicate with Rex at his e-mail address, rexrichardson@oscsystems.com or via AMSAT-NA.

AO-16 "S" Band On Then Off Again

Jim White WD0E informs us that the AO-16 "S" band transmitter has been turned off. It was turned on for testing and the tests confirmed that AO-16 does not have the power budget to keep it on and keep the 70 cm transmitter at a power level that supports entry level ground station operations.

The 437.05 MHz transmitter has to be run at about 0.5 W to allow the "S" band transmitter to remain on. Any higher than that and the software will turn it off to maintain a safe battery voltage.

Many people will be interested in weak signal sources at this time for testing their "S" band gear in preparation for Phase 3D, and it would have been advantageous to have an extra one. There are still two reliable sources available. DOVE, DO-17 has an "S" band transmitter on 2401.220 MHz and the UO-11 "S" band beacon operates on 2401.500 MHz.

Adventures in Antarctica

There has been quite a flurry of activity on the frozen continent recently with, amongst other things, an unaided walk to the South Pole and a sustained period of amateur activity on the amateur radio satellites.

Andre VK5AAP has been working at the American South Pole Station. Ron KE6JAB has been documenting his adventures on UO-22 with stories and photos. The photos are in JPEG format and are of very good quality. Those who do not have access to UO-22 or KO-25, but are on the Internet, can catch up with his activities on <http://www.thistle.org>. Material is being updated as it is downloaded from UO-22 by Roy WOSL.

Because of his latitude, Ron is restricted to operation via UO-22, although he has been trying KO-25 but has been finding uploads difficult. KO-23 is out of the question due to its inclination. Roy WOSL reports that Ron is using an IC-821, a small storage battery which he recharges with solar cells, a laptop PC running WiSP16, and two eggbeater antennas mounted on six-foot poles stuck in the snow about 20 feet apart. Just shows what can be done from a remote, QRM free, quiet location. One of the photos I downloaded from UO-22 showed Ron's tent with the eggbeater antennas standing outside.

MIR News

MIREX president, Dr Dave Larsen N6CO, reports that the previously announced MIR cross-band frequency experiment has been abandoned for now because of problems with the amateur radio antenna on MIR. The cross-band test was to have started on 1 December 97 and lasted three months. It was to have involved a 70 cm uplink to MIR along with a 2 metre downlink.

US astronaut Dave Wolf KC5VVF has been on 145.985 MHz FM simplex from MIR, but only sporadically. A space walk at the end of December was scheduled to check, and if necessary repair, the 2 m/70 cm antenna that might have been damaged during a space walk in November. That system may well be on the air again as you read this column.

The Kenwood TM-733 aboard MIR has been connected to the spacecraft's SAFEX repeater antenna. Miles Mann WF1F reports that MIR's 2 m amateur radio station was temporarily moved from the core module and installed in the Priroda module. This move was performed to take advantage of the backup tri-band antenna shared with the SAFEX II 70 cm FM repeater installed on MIR.

Although a new packet radio TNC was installed on MIR several weeks ago, not all the TNC parameters have been properly configured. MIREX has asked that ground stations monitoring the MIR Personal Message System (PMS) please be patient while the necessary adjustments are made.

40th Anniversary Sputnik Replica Goes Silent

Reports from around the world appear to confirm that the Sputnik PS2 mini-satellite has stopped transmitting. The last time I received the signal was on 29 December 1997. I believe it went silent a day or so later. It outlived its namesake predecessor and its own planned lifetime by several weeks. If you received the signal and you are interested in sending reception reports, the address is: QSL Information for Sputnik-40, Sergey Samburov (RV3DR), PO Box 73, Korolev-10 City, 141070, Russia.

Can You Hear the EARTHWATCH Satellite?

Amateur radio satellite enthusiasts, particularly those in the Southern Hemisphere, have been asked to help find a lost satellite. The EARTHWATCH Spacecraft was launched from Russia just before Christmas and apparently stopped transmitting sometime on Christmas day.

Rex Richardson of Orbital Sciences Corporation has asked for our help. Orbital Sciences will conduct the thermal vacuum testing for Phase 3D, so we owe it to them to try to help them if we can. The EARTHWATCH spacecraft parameters are:

About FO-20 and Other Sun-Synchronous Satellites

Like many LEOs, FO-20 is in a "sun synchronous" orbit. The precession in the RAAN of its orbit, due to the earth's oblateness, matches the earth's rotation around the sun so that FO-20 always has about 33 minutes of eclipse time each orbit and the rest in sunshine.

A sun synchronous orbit is a retrograde LEO polar orbit with an inclination of about

98 degrees. At this inclination, RAAN precession = 360 degrees in 365 days. The stability in temperature and solar energy is, needless to say, very helpful.

The ratio of eclipse to sunlight can be adjusted by varying initial orbital elements. FO-29, for example, is virtually always in sunlight, UO-11 has about 22 minutes of eclipse, and most seem to run about 33 minutes eclipse per orbit. This also means that FO-20 (and other sun synchronous

satellites) appear at your location at about the same "sun time" every day.

At my QTH, FO-20 goes over about 1.30 pm and 3.30 pm every day. UO-11, AO-16, DO-17, WO-18, LO-19, UO-22, KO-25, AO-27 and FO-29, etc are also in sun synchronous orbits. KO-23, RS-12/13 and RS-15, although in highly inclined orbits, are not sun synchronous. Thanks to Stacey Mills, W4SM, and Kazu Sakamoto, J1WTK, for this report via ANS. ar

Changing Times

Physical repeater site access is changing in the West. Some of our repeater and digipeater sites no longer have easy access. Towers we constructed are being denied to us, unless we meet a range of conditions. No longer can we drive to a site that amateurs built and climb the tower. Legal problems have emerged that are a serious impediment to maintenance and future development.

In VK6, the WIA holds an insurance policy that provides cover to WIA members working on WIA matters, and this insurance policy also covers affiliated clubs like the Repeater Group. The point of this insurance policy is that it provides cover for amateurs working on amateur community projects such as constructing a tower and maintaining amateur sites like beacons, repeaters, etc. This policy may also cover non-amateurs who may be at the site during construction and maintenance (there is some doubt about this and answers are being sought currently).

It would be reasonable to think that, with this rather large insurance policy, people or organisations that own the land, building or tower that amateurs are working on, should not be concerned; all is insured. However, this is not as simple as it seems. At many sites there are 'work safe' requirements.

One of our repeater sites, built over 15 years ago, is on a hill owned by a quarry company. Access to the site is either a long one kilometre climb on foot or car access via the quarry. The car access is easier, but recent enquiries to the quarry owners have produced concern at our access to the quarry on safety grounds. Not unreasonable and, as a result, those amateurs requiring access via the quarry have to undergo a one hour quarry safety course.

Simple enough but, in the course of contact with the quarry manager, questions about who we are and what safety qualifications we hold for working on our tower and repeater site in general have been raised. Our contact with the quarry managers has been infrequent; managers change and the new managers don't necessarily know

Repeater Link

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who we are. The end result of this is access to sites which amateurs have built is under threat.

Climbing

The most obvious concern with this type of amateur activity is tower climbing. If you fall off a tower you are most likely going to be seriously injured or killed. It is easy to see that work safe practices apply very readily to this type of activity.

In my work situation I climb towers often for my employer, the ABC. However, if it is required that I climb a Telstra tower, which I do from time to time, Telstra require a minimum qualification of a C class Structure Access Permit. To obtain this I did a four day course with Telstra covering ropes, climbing safety, climbing techniques, rescue techniques, and RF safety. The course was a mixture of class room and practical climbing. The course was not difficult, provided you have no problems with height, and overall was very good, except for the RF safety part which was a mixture of good stories (most of which were untrue) and misinformation.

I would be interested to hear from other amateurs who construct or maintain repeater and beacon sites. What is your experience with safety issues, etc?

CTCSS Access Only

CTCSS is much in the amateur news in VK6 of late, as one of our repeaters, VK6RTH on 146.800, now requires 123 Hz

CTCSS access. This came about to help solve an interference or mute problem with this repeater.

For extended periods of time the mute would open and the repeater time out. Winding the mute further back did not fix the problem. Difficult access to this site restricted the number of visits, so a replacement repeater was constructed, and the new repeater had the facility to be switched between normal mute access and CTCSS access. If the new repeater did not have the mute problem, then the fault was the original repeater's mute, and if the fault condition continued, then the problem was external to the repeater.

The replacement allowed for a trial of CTCSS access, to find out in a practical situation what amateurs' response is to CTCSS access. How many had CTCSS and how many would be prepared to modify those rigs that did not have CTCSS?

The results are not in yet but there have been those for and against. What it amounts to is, can the majority of amateurs, who do not have CTCSS encode fitted to older equipment, solve the problem? It is, at times, a complex problem as some radios, particularly hand-helds, are of an age such that commercial encoders are difficult or impossible to buy. Fitting a home brew encoder implies making it small enough to fit. More on the outcome of this trial in due course.

Almost Another CTCSS Encoder

With CTCSS being the topic in VK6 of late, my next technical article was to have been another CTCSS encoder. This circuit uses the MM5369 60 Hz clock chip. This IC uses the NTSC colour burst crystal of 3.5 MHz and divides it down to a 60 Hz square wave, all in an eight pin IC.

The interesting aspect of this chip is that it will divide any crystal, up to about 10 MHz, by 59,659.083. By choosing the right crystal, any CTCSS tone up to about 170 Hz can be produced and there is no need to adjust the CTCSS frequency.

There are many cheap crystals available over the counter from electronic part suppliers. Several of these crystals divide down to be close enough for several CTCSS frequencies. The resulting square wave is then passed through a filter to produce a sine wave. All very simple, and it can be made small enough to fit into most radios.

Trying to buy the MM5369 proved to be difficult. Once this chip could be bought at most electronic suppliers for a couple of dollars. Eventually I found the reason for the lack of supply: the chip is no longer made! So ended this project, but if you know of a similar chip that is eight pin, please let me know.

There are many ICs that can do the job, but they are far too complex and large compared to the now dead MM5369. By the way, there was a 50 Hz version of the MM5369 and this offered more chances of the resulting divided-down frequency being a CTCSS tone. I imagine this IC is also no longer made.

FM828 E-Band on 29 MHz

A couple of years ago I made mention of the possibility of converting the Philips FM828 E band to 29 MHz. There are many of these radios around and they can be converted to 6 metres. *Repeater Link* ran several articles on conversion to 6 metres. The question remained, however, can they be converted to 29 MHz? At present, the answer is that the receiver can, but I don't know about the transmitter.

Enough time was found to have a go at converting the E-Band to 29 MHz. After a lot of experimentation this is how I converted the E-Band to 29 MHz.

Local Oscillator

The local crystal oscillator is doubled and injection is on the high side in the E-band. For 29 MHz the doubler is used but not as a doubler, as the crystal frequency is 29 MHz + 10.7 (or 10.8 if you have the 10.8 MHz IF version). If 29.000 MHz is the receive frequency, then the crystal required is 39.700 MHz. The doubler circuit, which now becomes a straight amplifier, will not tune down to 39.700 MHz, but the addition of another slug in each of the tuned circuits will bring the tuning frequency down to what is required.

Wind the existing slug all the way in and then wind the second slug in until it meets the original slug. Next adjust the trimmer capacitors across the two tuned circuits for maximum injection at Test Point One. The multimeter needs to go between TP1 and pin 9, which is the 10 volt supply, and tune for a maximum. The slugs required can be taken from unused crystal oscillator channels.

The level of oscillator injection did not appear to be too high due to the original doubler now being used as a straight amplifier.

Front End

The four front end tuned circuits are about 10 turns of enamel wire close wound on to a solid plastic former. You have to remove these plastic formers and replace them with ferrite cores. The wire is thick enough to support itself.

I was able to remove these plastic formers without unsoldering the coils. However, it was not easy as there is a small amount of glue on all of the coils anchoring them to the plastic formers. As it turned out, I had to unsolder and remove the first two coils anyway, as both these coils are tapped at one turn which has to be modified to be two turns from the bottom.

My first attempt with the front end was to remove the plastic formers, insert the ferrite cores and tune the front end. The result was a receiver sensitivity of about a microvolt; fair, but not good enough. Changing the first two coils tapping point from one turn to two turns resulted in the sensitivity improving to what was expected, 0.3 microvolt for 20 dB quieting.

The Ferrites

You need as much ferrite inside the coils as possible. I used six-hole bead ferrites, the type used for RF suppression and available from most electronic stores. Mine came

from Dick Smith, Cat Number R-5430. These ferrites fit neatly inside the coils. To hold them in place add a dab of Silastic to each.

Extra C

Even with the ferrites in each of the four front end tuned circuits, the front end does quite not make it to 29 MHz. Add about 10 pF to each coil to ground. There is already a small capacitor across the tuning capacitors – leave that as is. The reason for adding the 10 pF will depend on just how tight you are able to maintain the coils after removing the plastic formers, etc. If the tuning capacitor is right out or right in when tuning the front end, change the 10 pF up or down depending on the situation.

Next Step

The next step is to have a go at modifying the transmitter. I don't think this will be easy, and it may turn out to be impossible. At the very least you have a 29 MHz FM receiver.

Having thought about the transmitter a fair bit, I have decided to replace the entire exciter with a 29 MHz crystal oscillator. The output of this oscillator will then be fed through a buffer-amp to the PA. I hope it will be possible to FM the crystal enough to achieve the required deviation.

This approach minimises the number of problems. The most important problem to solve is the PA. Is it possible to modify it down from 80 MHz to 29 MHz? I will let you know. **ar**



"Club Corner" – Coral Coast Amateur Radio Group

(published on pages 27/30 of *Amateur Radio*, November 1997)

If at first you don't succeed, try, try, try again!

At the foot of the above news item, we published the callsign of Les Daniels as VK2AKZ. We attempted to correct this in the *Update* column on page 44 of December *Amateur Radio*, but we got it wrong again!

Please note, that the correct callsign for Les Daniels is **VK2AXZ**. (We got it right this time, Les!)

It might be a good idea to correct both

your November and December copies of *Amateur Radio* now.

The Clemens Match

(published on pages 14-16 of the January 1998 issue of *Amateur Radio*)

Phil Zeid VK6PZ, the author of this article, has advised of the following error and three points of clarification:

On page 15, under the sub-heading **The Metal Matching Tube**, "boom" in line three of the second paragraph should read "radiator".

On page 14, second column, second paragraph, end of second line should read "A metal tube is preferred . . ."

On page 14, under the sub-heading **Construction**, the last sentence of the first paragraph should read "Don suggested the insulating system . . ."

Figure 4, as described in the text, should show the right hand clamp with the screw facing inwards.

It might be a good idea to correct your copy of the January 1998 issue of *Amateur Radio* now. **ar**

New Beacon

144.568 VK6REP Esperance PF06

It Was Going To Happen!

An e-mail to me from Steve VK3OT/KL7 reads: "Deja vu! Don't want to be a smart Alec about ZL to W QSOs, but I told you so! Same as in January 1989 and, in my humble opinion, we are in the same place of rise in Cycle 23 as we were in Cycle 22 after the large JA opening in October 1988, which equated to the large JA opening in November 1997.

"So which of the EU boys wants to continue to assert that because no 46 MHz TV is being heard that there is no VK/EU path? When VK1RX reported Italian TV on 24/11/97 no one took him seriously. Same as no one took OH1VR and me seriously in 1988.

"As I said, who wants to be the brave one to predict where we are? Lynn KL7IKV, handed me the solar map the day I arrived in Alaska and we had a huge auroral display, down to the ground in Steve Tolley's words, so the first thing I did was e-mail Mike ZL3TIC to be on standby, which he was and worked all the W5s and W7CI. By the way, the W6KV was Jimmy W6JKV. Well done and a Happy New Year present - well worth it."

USA on six metres - all on 1/1/1998:

0010	ZL3TIC	Samoa	55.2499	5x5
0118	VK2BA	K5IUA	50.1099	5x5
0040	ZL3TIC	F05DR/b	50.0500	
0044	ZL3TIC	W5WUB	50.1063	first
F2 opening ZL to Stateside				
0047	ZL3TIC	W5IUA	50.1063	5x1
0048	ZL3TIC	W5VY	50.1063	5x5
0049	ZL3TIC	W7CI	50.1063	5x5
0056	ZL3TIC	W5EU	50.1063	5x5
0057	ZL3TIC	W6JKV	50.1063	5x5
0109	ZL4KB	W5VY	50.1103	
0109		W4DUP	50.1250	
calling CQ Pacific				
0109		W7CI	50.1250	
calling CQ Pacific				
0127	WW2R	VK8RAS/b	50.0465	PG 6 6
heard				
?	ZL2TPY	N5BBO	50.1150	

Also heard a W2 and XE! Unbelievable! ... ZL3TIC.

I am a bit lost for words, where were all the VKs? ... VK3OT/KL7

Six Metres

Geoff VK3AMK said it had been an interesting time on six metres with a combination of remarkably constant Es and, no doubt as a consequence of that, very regular JA openings, but no JAs.

On 18/11 Geoff worked JA1, 2, 3, 4, 0; 21/11 JA1, 4, 7; 22/11 YJ8UU; 23/11 V73AT; 24/11 JA1, 3, 4, 5, 6, 7, 9; 25/11 JA1; 27/11 JA1, 2, 3, 4; 1/12 JA1, 2, 4; 2/12 JA1; 6/12 YJ8UU.

Geoff comments: "This series of openings seems all the more remarkable having just come off an almost totally dead period on HF. About two months ago it was difficult to work DX even on 20 metres. During November, 20, 15 and 10 metres have picked up to produce better conditions than we have experienced in

VHF/UHF A Expanding World

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All times are UTC

probably the last five years. A most amazing recovery indeed."

25/11: 0122 VK3BWT 5x9; 0335 JH1WHS 5x9; 0337 JA1RJU 5x9; 0340 JE2DWZ 4x5.

25/11: From 0335 to 0617 a huge JA pile-up in Districts 1, 2, 4, 5, 6 and 0 worked collectively by ZL2TPY, ZL3ADT, ZL3AUU, ZL3TIC, ZL3TY, ZL3NW, ZL4TBN, VK3AMK, VK3BW, VK3OT, VK4FNQ, VK4GPS, VK5BC and V73AT.

2/12: 0348 VK4APG to JR2NET 50.180; 0345 VK2HO to JA1RJU 50.120; 0342 VK4GPS to JL4GTO 50.110; 0340 VK4GPS to JA1RJU 50.140; 0327 VK2QF to JA1RJU 50.110.

4/12: 14,000 TV transmitters. Whilst searching for 48 MHz TV transmitters, we found a site showing that Russia, etc has over 14,000 TV transmitters! It is not known how many are low band ones ... the search goes on! ... Six News.

Milan OK1XH advises: "Confirmation has now been received that Moscow TV is re-transmitted throughout the 11 time zones, some of which carry exactly the same offset frequency. I am still trying to find out more regarding Russian frequency/QTHs on Band 1 from the EBU. For whatever reason, they use the same offset all over Europe; I do not think there is any difference at all in former USSR. Thus, it is not possible to identify the transmitter location."

6/12: From ZL3TIC: 0556 3D2CM 5x9 50.130; 0725 V73AT 5x5 50.110. 7/12: 0331 V73AT to AH8A 50.110 5x5; 0322 V73AT to ZL2WNB 50.110 5x1.

7/12: 2314 YJ8UU into Melbourne and again at 0102. Worked by many VK3s. QSL is via ZL2HE. Stuart is aware of 28.885 MHz and will endeavour to operate there. ... VK3OT 8/12:

0100 49.750 5x5.
0300 46.170-240 5x9, also 57.240-250-260 5x9, 69.750 audio 5x9.

0500 MUF now up to 90 MHz - 86.200 and 86.250 5x9.

0545 49.750 +/- in up to 5x9 with QSB.
0700 FM Broadcast band open, stations heard 100.2-100.6-101.3-102.5-103.6-105.100-105.5-105.7-106.7-107.7 all 5x9.

0730 148.183 +/- pagers in for 10 minutes, nothing worked on two metres.

0900 148.183 +/- in again for five minutes. Six metres open all day to VK1, 2, 3, 4, 5, 7, strong signals. ... ZL3TIC.

8/12: ZL4TBN worked: 2148 (7/12) VK4PU, between 0058 and 1020: VK2BHO, VK2ZVF, VK2DN, VK2FV, VK2BA, VK3DUT, VK3ANP, VK3BWT, VK5ZBK, VK5KL, VK5ZLX, VK5ZGC, VK5PO and VK7WX. At 0755 Australian pagers on 148.183, but could not raise anyone on 144.100.

9/12:
0300 49.750 +/- up to 5x7;

0400 short hop Es to the North Island, 45.240-250-260, 55.240-250-260 5x9; 0400 ZL2KT 5x9, ZL2AGI 5x9;

0500 ZL3ADT worked 3D2CM 5x9;

0530 55.250, 59.750 American Samoa 5x9 also 59.750 5x9; in for three hours! 0700 49.750 back in and up to 5x8;

0600-0800 VK1, 2 and 3. ... ZL3TIC 12/12:

0000 VK4BRG/b 50.077, VK4ABP/b 52.345, VK4RGG/b 50.057.

0030 VK6BE, VK6KAT, VK6KRC, VK6AKT and VK6KJH.

0100 VK6RBU 50.306 559, VK6RPH/b 50.066 579, VK8RAS/b 50.047 599.

0134 ZL2WNB to KH7R 50.110.

0140 VK6AKT worked ZL3NW, VK6KRC worked ZL3TLG, VK6 to VK2, 3, 4, 5.

0200 American Samoa 55.250 5x9, also 59.750 5x9.

0239 ZL3ADT to V73AT 50.120 5x8.

0240 ZL3TIC to V73AT 50.120 up to 5x9.

0245 KHONTV Hawaii 55.2398 up to 5x8.

0330 KHON-TV 55.2398 0330 559 60 Hz NTSC.

0400 ZL3SIX 50.040 b/s from Hawaii best on NE Yagi.

0400 KVZK-TV 55.2498 599, Mt Alava American Samoa 59:750.

0430 KH6HI 50.065 519 Multi Es 7000 km. ... VK3OT.

14/12:
0010 VK8PN 5x1 50.110

0013 VK8RH 5x5 50.120

0030 55.250 American Samoa 5x8

0035 45.250, 260 5x9. ... ZL3TIC

14/12; Graham VK6RO said: "We had Es early from about 2200 with VK8RAS/b in for hours, plus 46.171, 46.240, 45.240, 45.250, also VK4RIK/b Cairns weakly. I did not work anyone as I was listening for indicators. Heard VK4JH. The VK8RAS beacon would not go away, along with the constant 57.250 TV."

14/12:
0000 David VK2BA reported hearing F05DR/b 50.050 previous UTC day.

0545-0555 JA2IGY/b, VK8VF/b, VK8RAS/b, VK4ABP/b, VK4RGG/b, VK4BRG/b.

0600 VK4 to VK6KAT Es.

0910 VK8MS to ZL2TPY, VK7GUN, plus VK2, VK3, VK5.

1030 VK8VF/b, VK8RAS/b, 48.23994 E2, Malaysia 48.2500.

1112 Anniversary QSO with VK8GF, first worked 14/12/62, 35 years ago.
1200 RI TV offsets 499.7468-7476-74994-

0230 55.2498 American Samoa 5x9
0300 AH8A 50.140 5x5. Name is Bill, grid AH45, using a 1/4 wave antenna and 60 W.
0310 AH8A also worked ZL3TLG, ZL3AAU and ZL3TCV.
0315 55.2498 5x9. ... ZL3TIC.

Successful prompting of N5OLS/KH8 at the weekend alerted AH8A to the prospect of six metre QSOs with VK and Bill AH8A was worked at 0405 on 15/12 5x7, QSL via AC7DX. This was a return to the band after a spell of 17 years. YJ8UU also worked. ... VK3OT

On 14/12, John VK4FNQ reports working at 0044 VK6HK 5x5, 0053 VK2YO 5x5, 0108 VK2FZ/4 5x9, 0130 VK8ZCU 5x9, 0156 VK8MS 5x9, 0211 VK8LM 5x9, 2241 VK3TBM 5x5.

15/12: 0215 VK8RAS/b 559, 0307 VK6ET 5x5, 0340 VK6KAT 5x9, 0346 VK6JJ 5x9, 0358 VK6KZ 5x9.

15/12:

Bill AH8A had a busy period between 0300 and 0405, working at 0300 VK3SIX, 0305 ZL3TIC, 0310 ZL3AAU, 0312 ZL3TLG, 0315 ZL3TCV, 0355 ZL3ADT, 0400 VK3OT. From 0055 to 0105 YJ8UU worked VK3SIX, VK4KRC and VK2YO.

19/12: A slightly different slant on the news, from Tony Mann, a TV DXer living in Perth. He reports 5000 km Es to the Philippines as follows:

0930-1034 A2 55.2500 and 55.2505 60 Hz, 59.75 FM, A3 61.2500 60 Hz,
0955-1007 A5? 77.2500 - very weak, A2 55.2500 and 55.2505 also noted in Sydney at the same time.

20/12: 0610-0614 JR0QFA to ZL4TBN, ZL2TPY, ZL2AGI; 0605-0621 JA1RJU to VK4JSR, VK4KK, ZL4TBN, ZL2AGI, ZL2TPY; 0220 VK3OT to YJ8UU 5x9.

20/12: Mike Farrell VK2FLR says that he spent a very pleasant evening with Chris Gare G3WOS, who was in Sydney for a couple of days. Chris is Chairman of the UKSMG and showed Mike his Web site at <http://www.uksmg.org>. Well worth a look.

24/12: ZL3TIC report:

0015 55.250-59.750 5x9 - in all day up to 0730.

0700 very strong back-scatter 45.240-250-260, 46.170-240 all 5x9 also 55.240-250.260 5x9.

0745 very strong VK2, 3, 4, 5, 7 in all night.

0800 48.250 video 5x8.

0805 VK6JJ 50.140 5x9.

0815 FM broadcast band opened 101.700 (mix 101) 5x9 and 105.700 5x9.

0818 148.183 pagers in for five minutes - nothing worked on two metres.

0830 48.240-250-260 up to 5x9 beaming VK6.

26/12:

2200 46.170-240, 57.240-250-260 5x9.

2230 very strong Es to the North Island, worked ZL3NE, ZL1THQ, heard ZL2KT, ZL4TBN, ZL4LC, ZL3TY and others.

2235 FM broadcast band wide open, stations heard 101.5, 106.3, 105.2, 102.5, 107.7, 106.1, 104.1, 104.9, 105.1, 105.7, 106.5, 107.9 all 5x9, most coming from Sydney, FM band open

for two hours.

2310 148.183 pagers 5x9.

2320 VK2FB 144.1 5x5.

2325 VK2BBF 144.1 5x7.

2330 VK2XK 144.1 5x7.

27/12:

0045 55.250 American Samoa 5x9.

0100 YJ8UU 50.135 5x9.

0110 FK1TK 50.140 5x9.

0130 55.250 American Samoa 5x9.

2100 46.240-170, 57.240-250-260 all 5x9.

2200 very strong VKs in VK1, 2, 3, 5, 6, 7.

2320 VK6YU 5x7 50.140.

28/12:

0010 55.250 American Samoa 5x9.

0123 50.150 VK6AKT 5x5.

0126 50.150 VK6HK 5x7, also 57.240-250-

260 5x9, 69.750 5x9, 86.200 and 86.250 5x9. ...

ZL3TIC.

28/12: From 0421 Doug VK0YQS at Macquarie Island worked ZL3TIC 5x9, also ZL3NW, ZL3ADT, ZL3AAU, ZL3TLG, ZL3TIB and ZL3TY.

01/01/98 from ZL3TIC.

0600 49.750 +/- 5x9 with lots of offsets.

0615 heard weak JA on 50.110 JA1?

0615 46.170-240; 57.240, 250, 260 5x9.

0615 55.250 American Samoa 5x9.

0900 86.200, 86.250 5x9 also 107.500 and 107.900.

0935 148.183 pagers up to 5x8, nothing worked on two metres.

0935 Very strong VKs - VK1, 2, 3, 4, 5, 7 5x9.

0935 48 MHz TV strong beaming VK4. I would like to know where these were coming from as the offsets were different from normal. Here are the offsets at zero beat: 48.26040, 48.23970, 48.24997, 48.25000 (many on this frequency), 48.23860, 48.25700, 48.24940, 48.24990. Any ideas?

The Calling Frequency - Again!

Several prominent amateurs have made comments along these lines: "At busy times 50.110 MHz can be almost constantly in use by VK2, VK3, VK4 and VK5 stations. If they are not using it for QSOs, as do a few with great consistency, there is an endless procession of stations calling and then arranging an alternative frequency to use. A given station may only be there for a minute or so but when station after station goes through the same procedure the frequency is rarely clear at all."

It appears we now have the new calling frequency operating on 50.200 MHz and so far people are getting used to working DX only below 50.150 and locals (ie VKs) above 50.150. It is working well and getting better. I was annoyingly amused recently to hear one amateur, who regularly holds QSOs on 50.110, say that he is "now too old to change his ways!" Really!

Thanks for your co-operation to those who are attempting to do the right thing and leave the segment up to 50.150 free of local contacts. Overseas, the idea is working well. Unfortunately, many VKs who continue to operate below 50.150 are probably not WIA members and therefore never read these notes. Also, shifting from 50.110 to say 50.115 or

50.120 is not a great help either due to splatter on 50.110 when signals are strong or the noise blanker is in use. When you QSY from 50.110 go above 50.150, there's plenty of room up there.

New Station

A new station is Rick Kowalewski VK6XLR at Exmouth, North Western Australia, rickski@ozemail.com.au or vk6xlr@nwc.net.au and <http://www.nwc.net.au/members/vk6xlr>.

Rick is a long way from anyone but is managing to work to various states on six metres. He is also attempting a contact with BY1QH in Beijing via two metres TEP. He says: "No luck at this stage. Hopefully February will bring some results."

Such a contact is possible as Beijing is nearly due north of Exmouth and about the right distance, based on previous experiences with such contacts between Japan and VK6 and western VK4. Also, in my view Rick would be well advised not to overlook a possible two metre path to Africa.

Closure of VK3SIX/b

Steve VK3OT advises: "After due consideration to the time I will spend away, the remote location of the VK3SIX/b site, and the possibility of a fire being caused by equipment malfunction spreading from the caravan to neighbouring grasslands and state forest, I have taken the only sensible action and shut down and isolated the whole site until 1 March 1998. This paves the way to run keyers from BP51 Alaska on the same frequencies, so if you hear VK3SIX it will be /KL7, providing permission is granted."

Thanks to Six News, VK3OT, ZL3TIC, ZL4TBN and others as noted for much of the above information.

A Mid-Winter Contest

Rod VK4KZR has proposed the establishment of a mid-winter contest to encourage operation via more challenging propagation modes like tropo-scatter, meteor scatter, ducting, etc. It should also create year-round interest in VHF/UHF/SHF operation. What do you think?

Another DXpedition!

Advice of this DXpedition was sent too late for inclusion in the January notes, but at least you are advised that a group of amateurs were planning another DXpedition in mid-January 1998 for a period of approximately two weeks, with timing and duration dependent on the weather and propagation leading up to that time.

Those directly involved were to be Alan VK3XPD, Russell VK3ZQB, Trevor VK5NC, Colin VK5DK and David VK5KK, with several other potential 10 "Gigers" joining the activity, and these include Rob VK3DEM, Roger VK3XRS, David VK3KAB, Max VK3TMP, Mark VK3TLW and Roger VK5YYY at Whyalla.

There would undoubtedly be some activity from a few other active stations in VK6 and

VK5 who have a range of various transverters. They are: Wally VK6KZ, Neil VK6BHT, Alan VK6ZWZ, Wally VK6WG and Roger VK5NY, possibly others. Results in next month's notes.

John Moyle Field Day

Alan VK5AR (formerly VK5BW) said in a packet message that he expects to operate portable from Mount Bryan during the John Moyle Field Day Contest in March. He will operate on 50, 144, 432 and 1296 MHz SSB, CW and FM, with possible HF liaison on 7195 and 3695 kHz.

He will run 100 watts on 50, 144 and 432 and 10 watts on 1296 MHz. K1FO antennas on 18 foot booms will be used for 144 and 432, a four element Yagi on 50, and a 28 element loop Yagi on 1296 MHz. Alan would welcome contacts.

From Alaska

Steve VK3OT/KL7 reports in an e-mail that he has a six metre Yagi operating at 50 feet, also a three element 10 metre Yagi at 40 feet. Using a Windom antenna on HF he is having many contacts with Asians in BV/BY/UA0/JA on 7 MHz CW. He says: "It was warm today at minus 12 and I was able to work outside all day in light snow showers. Sun set at 4.00 pm local today (2/1) and gaining an extra eight minutes per day as we go along. Happy New Year to all."

Two Metres

Barry VK3TBM said conditions on 8/12 between 0945 and 1100 provided a good path from Melbourne to Mount Gambier, allowing him to work Trevor VK5NC, Colin VK5DK and John VK5DJ. The VK5VF beacon was not audible.

Ron VK3AFW reports on a mixed bag of contacts:

8/12: 0735 50.250 worked Joe VK7JG 5x9. Es down to 400 km!

0743 144.100 Joe VK7JG, 5x6-7, tropo.

0745 144.080 Andrew VK7XR, 5x1-5, tropo.

0746 50.250 Andrew VK7XR, 5x1, tropo. No sign of Es.

0938 50.180 VK5PO working VK7JG, no sign of Joe.

0943 50.180 John VK5PO 5x7-9.

0949 144.090 VK5NC 5x6-7; Barry VK3TBM also worked VK5NC.

1010 50.150 VK5ZTJ/ME Roseworthy, good signals from the 20 watt rig.

1020 VK5GN, 5x7-8.

1026 David, VK5AYD at Coober Pedy, 5x7-8. David's 20 watt signal still in at 1058 when he went QRT.

2100 ZL TV in.

2115 Des VK3CY worked Andrew VK7XR, on 432.150, 5x1 at 580 km.

9/12: John VK4FNQ reports on a good two metre opening from North Queensland.

0720 strong signals on 143.750 MHz.

0726 heard a station talking on 144.100 very weak.

0731 after many CQ calls heard a very weak QRZ on 144.100.

0745 a land line to Garry VK4ABW who now lives about 10 km away.

0740 VK4ABW worked VK5NC 144.100 Mt Gambier.

0743 VK4FNQ worked VK5NC 144.100.

0751 VK4ABW worked VK5DK 144.100 Mt Gambier.

0758 VK5NC Call CQ 5x9.

0808 VK4ABW to VK4BKS 144.100 Atherton.

0810 VK4FNQ to VK4BKS.

0826 VK4FNQ to ZL4TBN 50.220 5x9.

VK4FNQ also made many CQ calls on 144.200 MHz, nothing heard.

0715 ZL stations on 50.110 MHz working JA, but no JA into NQ.

VK4FNQ heard no sign of 49 or 48 MHz TV all day. VK4FNQ monitors 50.110, 50.200 and 144.100.

Gordon VK2ZAB reports the following on two metres SSB tropo contacts. Signals were low at S1-3, except ZL1IU at S5-6.

07/12: 2047 VK2ZAB to VK4TZL.

12/12:

0900 VK2BBF to ZL2TAL, ZL2VAL. VK2XKE to ZL2TAL, ZL2VAL. VK2ZAB to ZL2TAL.

2030 VK2BBF to ZL1IU. VK2ZAB to ZL1IU. VK3BWT to ZL1IU

13/12: 0700 VK2BBF to ZL2TAL. VK2XKE to ZL2TAL.

24/12: Gordon VK2ZAB also reported that on two metres at 0109 VK2BQJ to ZL1IU; 0206 VK2ZAB to ZL1UWQ; 0208 VK2BBF to ZL1UWQ; 0216 VK2BQJ to ZL1UWQ.

Gordon VK2ZAB notes: "The two metre opening reported by VK2XKE has turned out to be of longer duration than was first thought. Any duct, let alone a lasting duct, this early in the season is unusual although not unprecedented. The first contact was on 2 m SSB between VK3BWT and Nick ZL1IU at about 0400 UTC on 26/11/97. This was followed by 2 m SSB contacts with ZL1IU by VK2BBF, VK2ZAB, VK2DXE and VK2XKE. ZL1IU was last heard in Sydney at about 0800 UTC 26/11.

"The beacon on 144.240 MHz near Auckland had been heard in Sydney from time to time during this period. However, at about 2205 UTC 26/11/97, VK2BBF worked Ray ZL2TAL on 2 m SSB. VK2ZAB followed with a 2 m SSB contact with ZL2TAL. Throughout the remainder of that day and up until about 0600 UTC on 27/11, VK2BBF and VK2ZAB were in more or less continuous contact with ZL2TAL and ZL2VAL on 2 m SSB. 70 cm was tried with ZL2TAL without success. Also on 27/11 VK2ZAB made contact on 2 m SSB with ZL3NE at 2251, ZL1UWQ at 0530 and ZL1IU at 0553. A successful contact on 70 cm SSB was also made between VK2ZAB and ZL3NE at 0545 27/11. Two metre beacons on 144.240 MHz, 144.256 MHz and 145.226 MHz were heard off and on throughout the day.

"Isn't it time that we began to look for a separate cause or combination of causes for this E layer propagation on two metres rather than thinking of it as just an extra intense extension of the E layer propagation on six metres?"

Send your views on this to Gordon VK2ZAB at VGCD@bigpond.com

Meteor Scatter

Ron VK3AFW said: "Adrian VK2FZ/4 completed a two way SSB QSO with VK3AFW via meteor scatter on two metres from 2.40 to 3.05 am EASST (1540-1605 UTC) on 14/12. The QSO should have been completed earlier, but VK3AFW was half asleep and did not copy two long bursts which took place around 2.45 and 2.50 am. Replaying the tape showed no reason why the complete call signs group and a five digit number should not have been copied earlier. VK3AFW intends to have a strong coffee before the next sked. Any other takers out there?"

"Also at 2200 I worked VK1s BG, DO, MP and VP on two metres via aircraft enhancement. I was pleased to catch up with Eddie VK1VP as he is behind Black Mountain and not often heard by me here. I also worked VK1BG on 70 cm.

"On 15/12, Adrian VK2FZ/4 reported to me that he had worked John VK3KWA on two metres MS at around 3 am local (1600 UTC)."

Microwaves

Wally VK6KZ reports: "Neil Sandford VK6BHT and I are having great success from home to home with long rag chews on 10 GHz. Last night, 10 December, it was for one hour peaking 5x9, waited one hour and spoke for about 15-20 minutes before I went to Fremantle and had another 5x9+ contact for about 20 minutes. Another contact this morning but much weaker 4x1 both ways. This was while there was the trailing edge of the trough along the west coast. Temperature at Perth was 21 degrees and relative humidity 98%.

"We have now had 10 home to home contacts over the 378 km path. Sad thing is that Neil will be departing Geraldton for the east in mid-January so I will be a very isolated 10/2 GHz operator"

A message from David VK5KK advises that Roger VK5YYY at Whyalla, about 250 km NW of Adelaide, is a new operator on 10 GHz. The narrow-band equipment consists of a G3WDG transverter running 200 mW into a 60 cm dish. Roger has set up his equipment to work from home. Apparently he has a clear path towards the south east, and is the seventh operator to make it to narrow-band 10 GHz in SA. Roger's phone number is 08 8644 0318.

Closure

I have simply run out of space. E-mails received after 1 January have had to be held over until next month. I hope you will understand.

Closing with two thoughts for the month:

1. If it weren't for having more leisure time these days, many men would never finish the work they take home from the office, and

2. The motor car did away with horses. Now it's working on the rest of us.

73 from *The Voice by the Lake*

ar

Ionospheric Update

Evan Jarman VK3ANI

C/o PO Box 2175
Caulfield Junction VIC 3161

Solar Activity

Solar flare activity around the middle of the last quarter produced class X flare activity during November. These flares came from two solar regions, the first two flares belonging to the same region. Those flares were class X2.1/2B at 0558 UTC on 4 November and class X9.0 at 1159 UTC on 6 November. The second region produced a class X2.6/2B flare at 1317 UTC on 27 November.

Ionospheric Activity

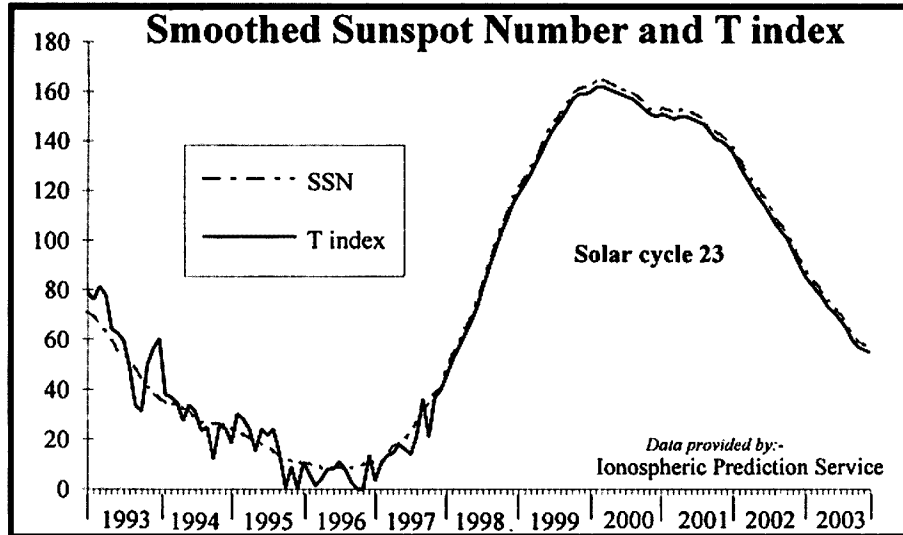
Depressed MUFs were observed in November. The first, and deeper, was observed on 8 November. It affected northern Australia with depression of up to 60% early in the UTC day recorded at Darwin.

The latter depression affected southern Australia. It was observed on 23-24 November.

Geomagnetic Activity

Significant geomagnetic disturbances were observed during the quarter. A sudden impulse observed at 2252 UTC on 6 November deepened to minor storm levels on 7 November. The class X flare on 4 November is suspected to be the cause.

A second disturbance deepened to minor



storm level between 0900 on 22 November and 1500 on 23 November. A coronal mass ejection on 17 November is suspected. The coronal mass ejection on 26 December also affected geomagnetic activity on 30 December, degrading HF propagation.

The Graphs

This is the third year that graphs of observations and trends have been included in this update. Minor changes have been made to make them easier to read. They are provided to enable a quick assessment of trends.

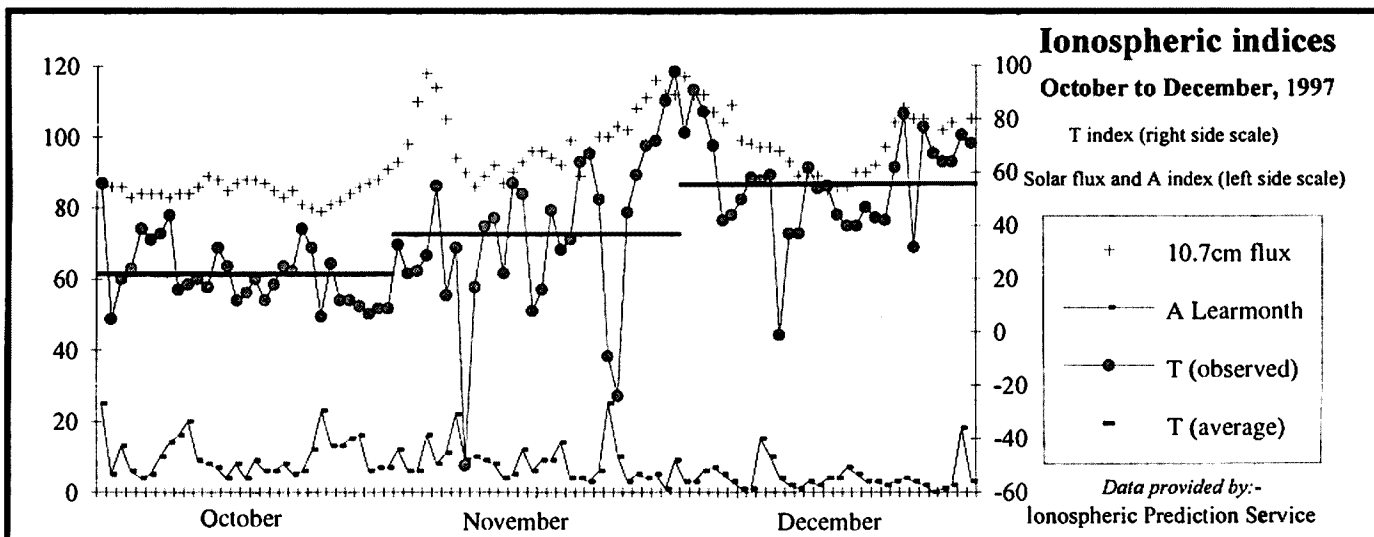
The smoothed sunspot number and T index graph is designed to show the solar cycle and where conditions currently fit into that cycle. The time scale is set to cover one solar cycle, nominally eleven years. Current conditions are designed to be within the middle three years. Past values are observations, future values are predictions. The end of the quarter (in this case 31 December 1997) is where past values go to predictions. Observations show the

variation in ionospheric conditions from the more idealistic smoothed sunspot number.

The T index can be thought of as the sunspot number that best matches the radio ionosonde observations. Predicted values show a close correlation, as you would expect. The value used in the *HF Predictions* each month comes from the table used to draw this graph.

The ionospheric indices graph displays the observations and the derived T index for each day. It covers the last quarter, the period that the update applies to. The effect of major events, like flares and storms, on propagation can be seen. As an example, compare the graph with the November flare and geomagnetic activity mentioned in the *DX* and *SWL* columns of last month's *Amateur Radio*.

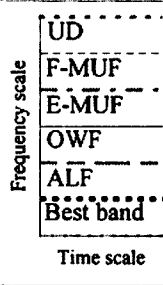
It can also be used as a current three month enlargement of the solar cycle graph. The trend in conditions should be identifiable in the variation of the daily observations. The monthly average of the observed T index is included to highlight this trend. ar



HF Predictions

Evan Jarman VK3ANI

T Index: 52



These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication.

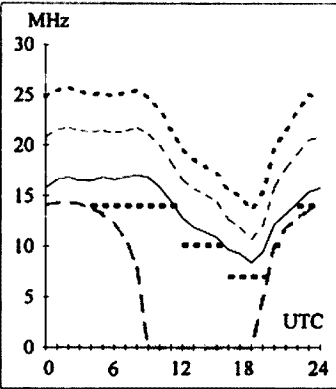
The frequencies, identified in the legend, are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

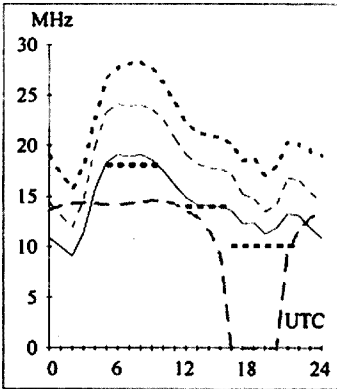
The predictions were made with the Ionospheric Prediction Service program, ASAPS V3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

ar

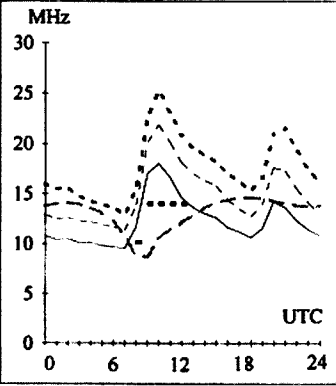
Adelaide-Christchurch 119
1 F2-6 1E0 Short 3057 km



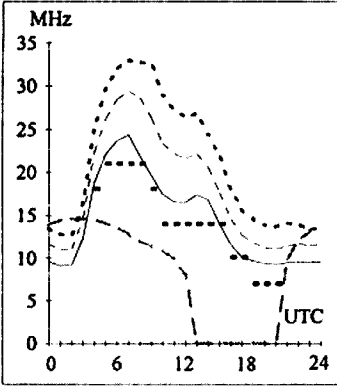
Brisbane-Lusaka 238
First F 0-5 Short 12385 km



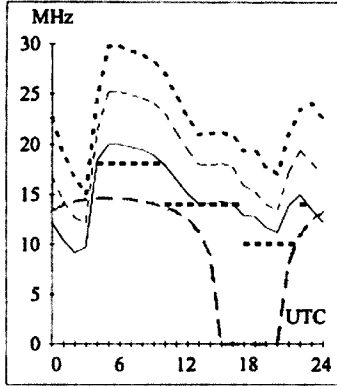
Adelaide-London 132
First F 0-5 Long 23755 km



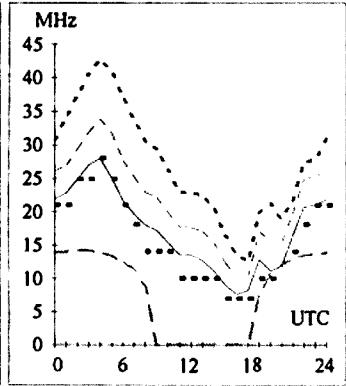
Brisbane-Moscow 321
First F 0-5 Short 14071 km



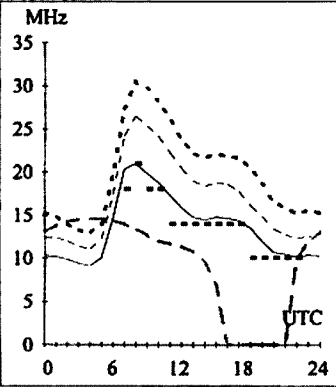
Canberra-Cairo 283
First F 0-5 Short 14265 km



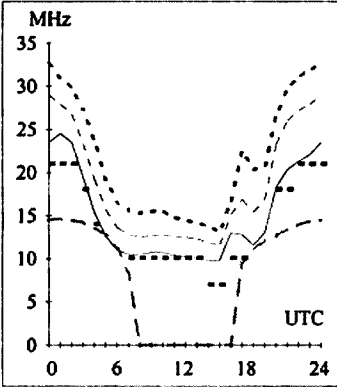
Darwin-Honolulu 65
First 3F 3-8 3E0 Short 8636 km



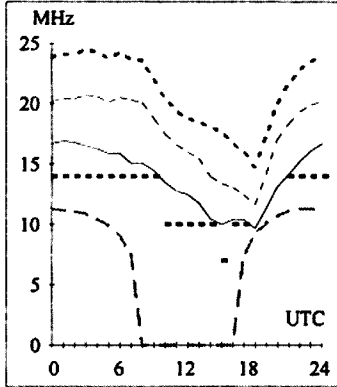
Adelaide-London 312
First F 0-5 Short 16269 km



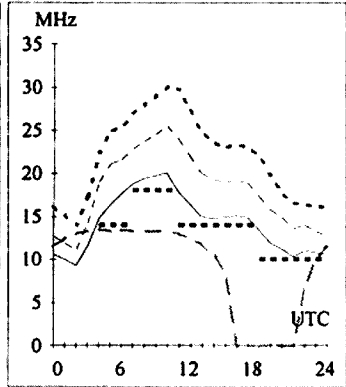
Brisbane-Seattle 44
Second 4F2-6 4E0 Short 11845 km



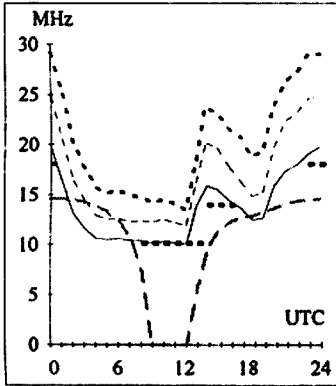
Canberra-Papeete 89
Second 3F8-12 3E0 Short 6309 km



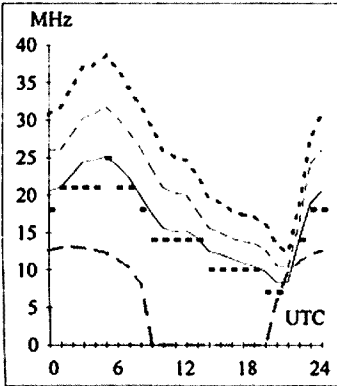
Darwin-Pretoria 242
Second 4F4-8 4E0 Short 10639 km



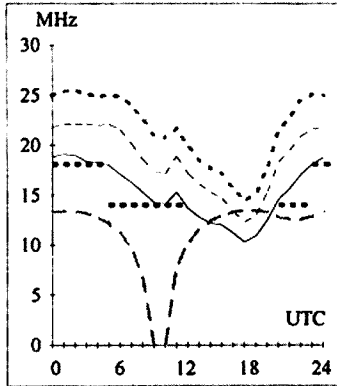
Adelaide-New York 67
First F 0-5 Short 17092 km



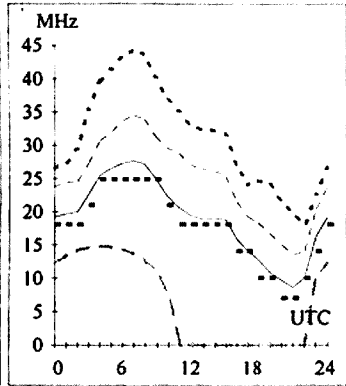
Brisbane-Seoul 338
Second 3F5-9 3E0 Short 7722 km



Canberra-Santiago 147
Second 4F3-6 4E0 Short 11322 km

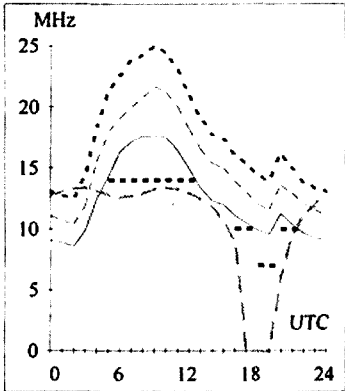
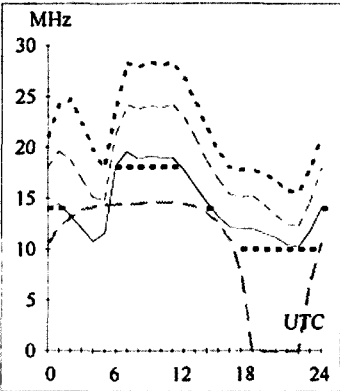
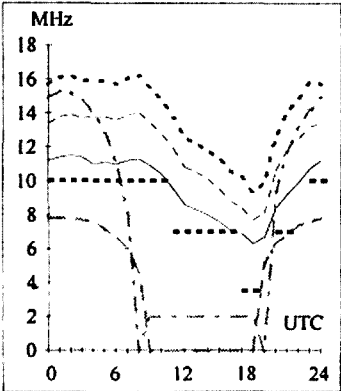
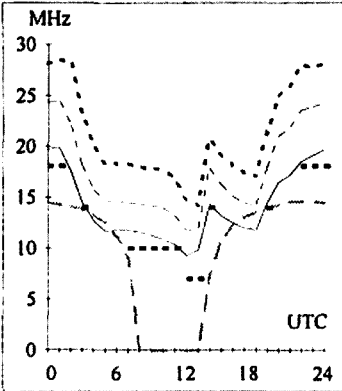


Darwin-Singapore 295
First 1F 0-5 1E0 Short 3351 km



Hobart-Dallas 79 **Melbourne-Auckland** 97 **Perth-Accra** 260 **Sydney-Capetown** 218

First F 0-5 Short 14405 km Second 2F18-24 2E4 Short 2623 km First F 0-5 Short 12787 km Second 4F4-9 4E0 Short 11012 km

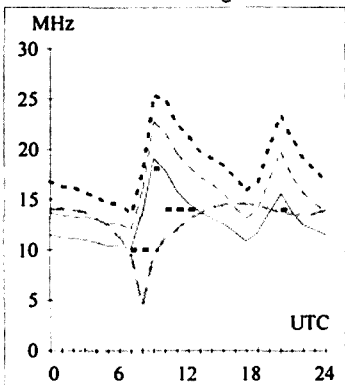
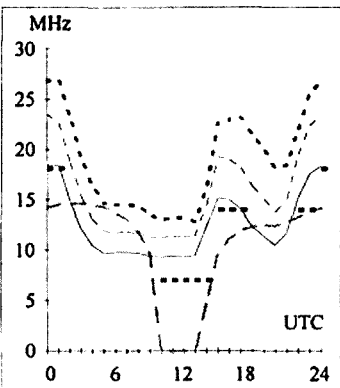
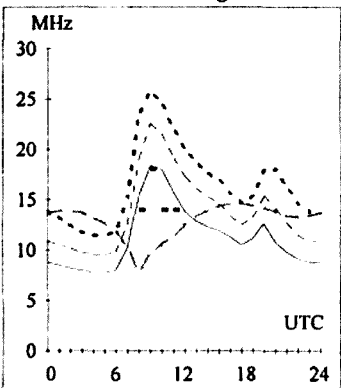
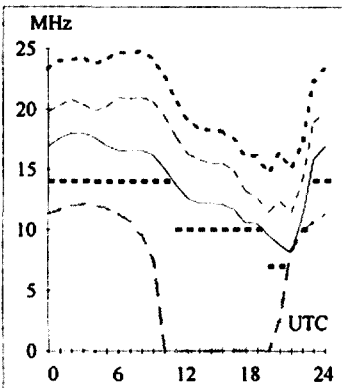


Hobart-Manila 331
Second 3F7-13 3E0 Short 6932 km

Melbourne-Helsinki 141
First F 0-5 Long 24818 km

Perth-Chicago 55
First F 0-5 Short 17659 km

Sydney-London 139
First F 0-5 Long 23032 km

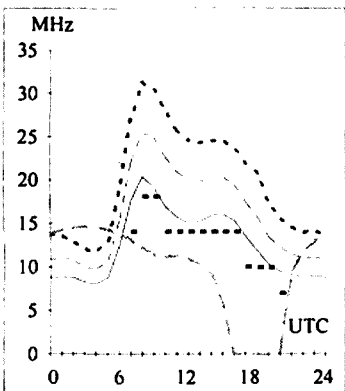
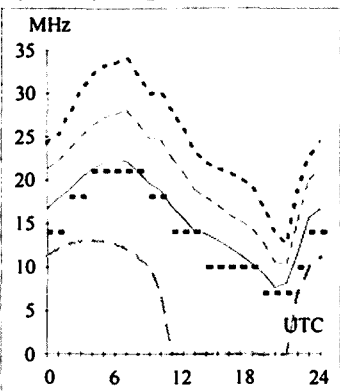
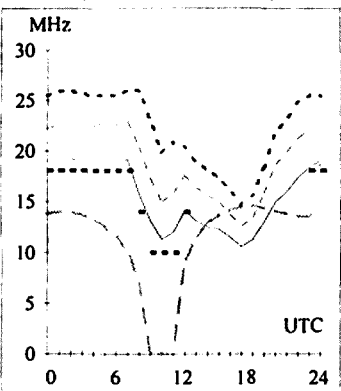
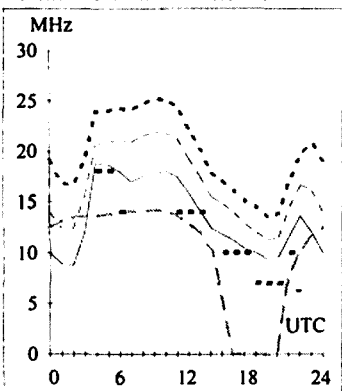


Hobart-Nairobi 255
Second 4F3-7 4E0 Short 11562 km

Melbourne-Lima 133
First F 0-5 Short 12950 km

Perth-Osaka 17
Second 3F5-10 3E0 Short 7684 km

Sydney-London 319
First F 0-5 Short 16992 km

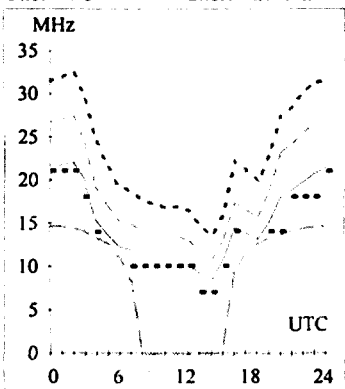
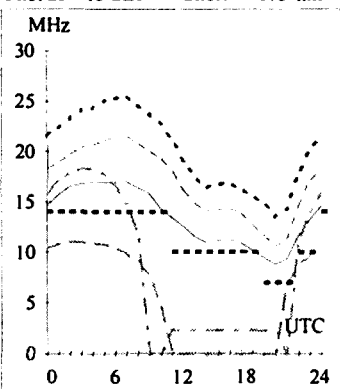
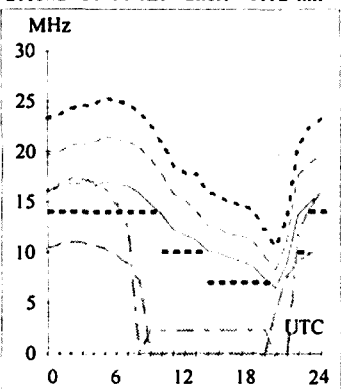
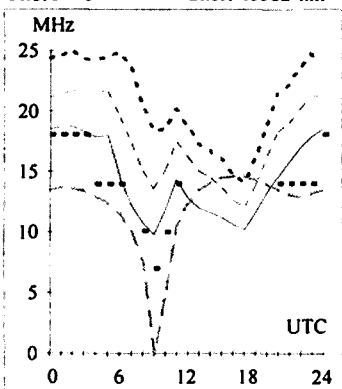


Hobart-Surinam 145
First F 0-5 Short 15362 km

Melbourne-Tokyo 356
Second 4F9-14 4E0 Short 8192 km

Perth-Port Moresby 59
First 2F9-13 2E0 Short 4073 km

Sydney-Los Angeles 61
First F 0-5 Short 12075 km



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 E-mail: vk3br@c031.aone.net.au

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- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX programs** for IBM XT/ATs *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005, Ph 07 358 2785.
- **HAM LOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone". The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02 369 2008 BH, fax 02 369 3069. Internet address rig@ozemail.com.au.

FOR SALE NSW

- **Kenwood TS-940S**, approx 15 - 20 hours use, like new; SM-220 monitor and BS-8 bandscope, new in boxes, never connected; matching SP-940 filtered speaker; MC-60 desk mic; all complete with boxes, handbooks, workshop manuals and special manuals from Kenwood, \$3250 the lot, or nearest sensible offer.
- **Icom IC-575H** 6 & 10 in 100 W all mode txcvr with FM, manuals, handbook, box, etc. \$1750 ONO.

- **Kenwood TS-811B** 70 cm all mode txcvr, excellent condn, \$1000 ONO.
- **Kenwood TS-700SP** all mode 2 m txcvr, digital readout, built-in PSU, very clean, goes well, \$650 ONO.
- **Dynascan USA Model E-200D solid state signal generator**, 100 kHz to 216 MHz in 7 bands, all metered, very good generator, original handbook, etc. \$350 ONO. All items being sold due to ill health. A Walsh VK2TBW, 02 4861 2092, fax 02 4861 1536.
- **Collins 51S-1** receiver, \$600. Tom VK2OE, 02 4646 1024 (evenings).
- **Kenwood TS-140S**, VGC, \$900.
- **Yaesu FT-747**, VGC, \$750.
- **Icom IC-25A** 2 m txcvr, \$200.
- **Icom IC-2SAT** 2 m h/held txcvr, \$200.
- **Bruce VK2WWW**, 02 6831 1188.
- Deceased estate of Arthur VK2FFH, **Kenwood TS-430S** txcvr, serviced recently at Kenwood, DC power cable, service and operator manuals, \$850, P&P extra at cost. John VK2FUR, 02 4625 1812.
- **Philips FM-828E** txcvr, converted to 6 m; **DSE 6 m half wave antenna**; **Drake TV-1000-LP** low pass filter, \$100 total. John VK2WW, 02 9546 1927.
- **QTH**, elevated position, flat block 700 sq metre, walk station, Mount Colah near Hornsby Sydney, DA approved for subdivision or keep as is, with Council approved 18 m tower, 100 sq m, house with 3 car garage/shack, built 195/96, NU steel construction, brick veneer, tile floor, northerly aspect, high side street. Ted VK2EZQ, QTHR, 019 460 437, 7 pm to 9 pm.
- **Alicon DR-590** 2 m/70 cm FM mobile txcvr, s/n 884, EDC-20 remote panel kit, **Maldol 2 m/70 cm duplexer**, workshop manual \$450.00.
- **Microwave Modules 435 linear amp**, 50 W out, 10 W in, s/n 1432/507792010, \$100.00, Randall VK2EFA, QTHR, 08 8087 5285.
- **Urgent Sale!** **Kenwood TS-50S** HF txcvr, \$1200.
- **AT-50** ATU to match, \$200.
- **Kenwood TM-2570A** 2 m FM mobile, \$120.
- **Uniden HR-2510** 10 m mobile, \$300.
- **Uniden Sundowner IJHF CB txcvr**, \$200.
- **Yaesu FT-26** 2 m FM h/held, \$200.
- **Yaesu FL-2100B** HF amp, 400 W PEP, non-WARC, \$300. No reasonable offer refused. R E Taylor VK2AOE, QTHR, 02 9449 6364.
- **Icom 02A** 2 m l/held, extra batteries and antenna, manual, good condn, \$250.
- **Rod VK2BRW**, 07 5524 3722 (Gold Coast).

- **Yaesu FTY-650B** 6 m inverter, \$140.
- **Microwave Modules 2 m transverter**, \$120.
- **Lafayette HA800** receiver, \$80.
- **Star SR200** receiver, \$80.
- **Marine AM txcvr**, 2-10 MHz, \$50.
- **Converted CB** now SSB on 28 MHz, \$50. All with documentation. Carl VK2TP, QTHR, 02 6845 1999 (BH), 02 6846 7530 (AH), fax 02 6845 1435.
- **Tower, 60 ft (18 m)**, three stage wind-up, three sets guys and turnbuckles, **TH6DXX** 6 el tribander, **Daiwa** rotator, dismantled Sydney, \$900.
- **Ted VK2EZQ**, QTHR, 019 460 437, 7 pm to 9 pm.

FOR SALE VIC

- **Eddystone 640** communications receiver, 1.7 to 30 MHz continuous, good original condn, working, needs little work, best offer from collector. Bob VK3PT, 03 5439 6314.
- **Kenwood AT-250** automatic ATU, all bands incl WARC, mint condn, with carton and instruction book, \$250. Bob VK3PT, 03 5439 6314.
- **IC-736** 100 W HF-6 in txcvr, auto tuner, AC PSU, s/n 2166, immaculate condn with manual and original packing boxes, \$2400 or best offer. Ian VK3AQU, QTHR, 03 5751 1631 (AH).
- **Amateur Call Book CDROM 1997** International and American listings on one CD, normally \$75, bargain at \$45. Alf VK3LC, QTHR, 03 9773 5334.
- **Collins 51J-4** receiver, with cabinet for table mounting if desired, mint condn, \$500. Howard, 03 9408 7597
- **Ameritron linear amp**, 600 W, 3 x 811 triodes, s/n AL81113539X, practically new, used only once, too heavy for invalid to handle, \$900 plus **MFJ-815B** power meter. A Lucani VK3AIA, QTHR, 03 5728 6624.
- Commercial VHF and UHF mobile radios, 60s and 70s vintage, **AWA 25M**, **Philips 747**, **Pye 734** and **706**, **STC 151** and **191**, **Vinten MTR20** and **MTR30**, \$15 each. Jeff VK3ZJS, QTHR, 03 5428 6309.
- **Kenwood TS-711A**, all mode VHF base station txcvr, s/n 5080554, 144 to 148 MHz, 25 W output, instruction manual, mic, EC, \$900. Steven VK3CIM, QTHR, 03 9547 5894.
- **Power supply transformers**: 20 V at 100 A, \$75; suit high voltage supply, 1875-0-1875 V at 1 A, \$75.
- **Filament transformers**: 2.6-0-2.6 V x 3 at 14 A, \$30; 5-0-5 V at 10 A, \$20; 10 V at 20 A, \$20.
- **Step down transformer**: 240 V/110 V at 6.8 A, \$35. Ray VK3RD, 03 9726 9222.
- **Plessey MTR-8000** 6 M txcvr, 24 channel, 40 W, all national repeaters and simplex frequencies, includes documentation and mounting cradle. Tony VK3ZOT, 03 9728 5598 (AH).
- Deceased estate VK3ALZ, **DSE wattmeter**, multirange, 144 MHz, 150 W FS; **DSE wattmeter**, multirange, 432 MHz, 50W FS; **DSE RLC Bridge**; **Kenwood TS-140** HF txcvr; **Emtron SWR and power meter**, 1.8-60 MHz; **Icom IC-726** HF +6 m txcvr; **VK Powermate PSI1**, 13.6 V at 20 A; **Boonton model 225-AP** signal generator, 10-500 MHz.; **Trio CS-1830** 30 MHz oscilloscope; **432 MHz solid state linear power amplifier**, homebrew, 80W PEP; **HF ATU**, homebrew; **160 m ATU**, homebrew; **Emotator 747SR** rotator with controller, plugs and cables; **Tower**, homebrew, 4 square welded sections, each approx 7 m; **144 MHz Quad** antenna, approx 8 m boom; **144 MHz Yagi**, approx 8 m boom; **Single piece spun aluminium dish**, approx 3.8 m dia; **TET** **Emtronics TE33** triband HF beam, 14/21/28 MHz, brand new in carton and sealed bags; **Wayne Kerr Model B601 RF** bridge, 15kHz to 5MHz; **DSE HF** linear amp, 160-10 m, 100 W; **VTVM**; **Hewlett Packard Model 618** microwave signal generator, to 7.6 GHz; **DSE frequency counter**.

1 GHz. First reasonable offer accepted. Contact Ron VK3AFW, QTHR, 03 9579 5600 (AH).

• **Kenwood AT-50** auto ATU for TS-50, new in box, \$250. **Yaesu World Clock**, QTR-24D, as new in box, \$50. **Kenwood SP-520** spkr, as new, \$35. **Kenwood TS-120V** 10 W SSB txcvr, EC, \$325. **Swan 350 HF** txcvr, mint condn, suit serious collector, \$250. **Kenwood PCIA** phone patch, \$20. **Yaesu FP-12 PSU**, OK for 100 W txcvr, \$120. Ron VK3OM, QTHR, 03 5944 3019.

• **Kenwood TS-520S** txcvr, manual, mic, DG-5 digital display, both EWC, \$320. **Healthkit HW-101 HF** 100 W txcvr, manual, mic, PSU, GWC, \$95. **Healthkit SB-101 HF** txcvr, PSU mic, manual, needs 6146 finals, \$40. **Yaesu FT-221** 144-148 MHz SSB/FM base/mobile txcvr, mic, manual, \$105. **6 metre 5 el Yagi**, \$60. **10 metre vertical antenna**, ex-CB, \$20. **Realistic DX-150A** 4 band comms receiver, OK, \$40. **Rapar SA-150** 15 W valve stereo AF amp, excellent condn, \$40. Robin VK3TNW, QTHR, 03 9729 1139 (anytime).

• **TS-430S**, \$850. **FT-101ZD**, \$550. **FV-101Z** ext VFO, \$100. **FT-101B**, \$200, 2 m HTs, **FT-290R**, \$150; and **FT-23**, \$150. **Cushcraft A3S** 3 el triband, \$500. **FM-321** 70 cm mobile, \$150. **AWA RT80 VHF Hi-Band**, \$40. **Leader 10 MHz CRO**, \$150. **AWA T242 Dist/Analyser**, \$800, 500 MHz frequency counter, \$150. **Slg Gen/Counter**, 1 Hz resolution, 50 kHz to 80 MHz, \$500. **NJ2-900** analogue phone tester, \$2000. **4CX350F**, \$150. **2C39A**, \$50. Lee VK3GK, QTHR, 03 9544 7368, 015 810 101.

FOR SALE QLD

• **Icom IC-740** txcvr, excellent rxcvr with two VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, good transmission reports on all bands, excellent appearance and working order, s/n 04199, \$750. Call for copy of specs sheet. John VK4SZ, QTHR, 07 4061 3286, johnb@connorth.com.au.

• **13.8 V DC, 30 A PSU** (8 x 2N3055s mounted on heatsinks), amp and voltage gauges, main switch, reset switch, LEDs, remote sockets for 25 A and 10 A requirements, call for descriptive photos and any other details, \$200 plus shipping. John VK4SZ, QTHR, 07 4061 3286, johnb@connorth.com.au.

• **Yaesu FL-2100B** linear amplifier, 2 US-made Cetron 572B tubes, 1200 W input, 80, 40, 20, 15, 10 m, looks good, no faults, \$650.00 ONO. Peter VK4VW, PO Box 171, Caboolture QLD 4510, 075 495 8724.

• **Realistic HTX-100** 10 m txcvr, SSB and CW, 5 and 25 W output, packet ready with mobile bracket, 10 memories, mic with frequency up/down, absolute mint condn, used once to test only, original packaging, s/n 05000075, \$250. Bernie VK4EJ, QTHR, 07 3205 5098.

• **Triton SB-1001 modulation meter**, auto AM-FM to 500 MHz, mains and internal battery operation, small portable size, handbook, \$95. **HP1740A CRO**, 100 MHz dual channel, delayed/normal time-base, handbooks, \$475. **Rotatable dipole**, 3 bands, "Spider" shape with elements mounted either side of the hub that houses the balun, mounts to single mast, tuned for 7 and 10 MHz ham bands and 5 MHz commercial, 10 m coax, \$60. **Philips PM16674** universal frequency and period counter, 550 MHz, high impedance input with variable sensitivity for LF to 120 MHz, 50 ohm input 50 to 550 MHz, \$190. **Audio oscillator**, 10 Hz to 1 MHz in four ranges, sine and square wave outputs, level meter, separate balanced output, 240 VAC, portable, \$150. **Bird 6154 Terminal** dummy load and power meter, 25 to 1000 MHz in four ranges, 5, 15, 50, 150 watts, N type connector, portable, \$130. Gary VK4AR, 07 3353 1695.

• **Hustler 5-BTV** 5 band trap vertical, 10, 15, 20, 40 & 80 m, excellent condn, \$190 ONO. Malcolm VK4ZMM, 07 3298 5454.

FOR SALE SA

• **Icom IC-706** mobile all mode txcvr, HF + 6 m + 2 m, immaculate condn, in original carton, s/n 01547, \$1600 ONO. John VK5KBE, QTHR, 08 8250 7259.

• **Hills 75 ft tower**, winch up, \$500. **TH3 Yagi**, \$100. **6 metre 4 el Yagi**, \$50. **2 x 9 el h/made 2 metre Yagis**, \$50. **3 el h/made 10 metre Yagi**, \$30. **HF 400 W linear amplifier**, 5 spare 811 valves, \$400. **2 metre valve converter, pre-amp, 6-40 amp, plus PSU**, \$40 the lot. Dale VK5AFO, 08 8391 2300 or 0417 889 628.

• Deceased estate VK5KTZ. **Icom IC-745**, s/n 02181, desk and hand mics, manual, \$700 ONO. **Yaesu FT726R**, s/n 3L070488, complete with 6 m, 2 m and 70 cm modules, mic, manual, \$1100 ONO. **Uniden 2020** txcvr, s/n 50911231, mic, manual, \$200 ONO. Contact Ian VK5QX, QTHR, 08 8250 1708.

FOR SALE WA

• **Yaesu FTV-707** VHF/UHF transverter with 50/144/435 MHz modules, as new, in original packing, manual, \$400. M Thomas VK6BMT, QTHR, 08 9399 2024, or 0417 910 922 until 1900 WST.

• **Kenwood TS-790A** top-of-the-range all mode VHF/UHF satellite txcvr, s/n 0020419, as new condn, (new \$3600) bargain at \$2250. **Yaesu FT-726R** multi-band all mode VHF/UHF base station with 2m, 6 m and 70 cm modules fitted, satellite unit also fitted, s/n 5L260465, excellent condn, \$1250. **Pac-Com TNC-320 HF/VHF packet TNC**, \$150 ONO. John VK6NU, QTHR, 08 9446 1345, 0412 911 230.

FOR SALE TAS

• **Icom IC-736** HF/6 m txcvr, general coverage rxcvr, built in auto ATU, PSU, as new, boxes, manuals, \$2250 ONO. **Kenwood YK88SN/1** narrow 1.8 kHz filter, Icom FL102 narrow AM filter suit IC575, IC760, IC761, IC775, as new. Allen VK7AN, 03 6327 1171, 0417 354 410.

WANTED NSW

• **811-A** (four), 8877, **4CX1000A** (possibly with bases) valves. **GAP Voyager**, TU-2033 tuning unit for Aerocom amplifier. **UEK-2000SAT** down-converter. **Drake PS-7** PSU. Tom VK2OE, 02 4646 1024 (evenings).

• **Radio Handbook**, 16th Edition, circa 1965, by W Orr; **Hi-Mound paddle**; **Slave clock unit**, 2 PP min type. Ray VK2FW, QTHR, 02 6365 3410.

• **Old heavy valve receivers**, civil or military, working or not; **BC221** frequency meter; will pay good money

for equipment. John, 02 9525 8901, e-mail dver@fl.net.au. Will be at Wyong Field Day next to Castle Hill military radio display.

• **Yaesu FT-101B HF txcvr manual**, or photocopy. Andrew VK2APA, 02 4961 5095, c9608721@alinga.newcastle.edu.au

WANTED VIC

• **Three RCAAR88 communications receiver control knobs**, 37 mm across skirt. Eric VK3BEG, QTHR, 03 5122 2190.

• **Codan 8332** handheld HF txcvr. **AN-PRC 8A, 9A and 10A** military VHF (txcvrs). Good prices paid for clean units. John VK3ATQ, QTHR, 03 9707 2110 (AH).

• **Self supporting tower, tri-band beam, rotator**, or anything that would help in setting up a permanent Scout Jamboree station, very limited funds available! Ray VK3FQ, QTHR, 03 5436 8301.

• **Racal Model RA 6217A HF rxcvr circuit diagram and manual** to borrow, purchase or copy. Lee VK3GK, QTHR, 03 9544 7368, 015 810 101.

WANTED QLD

• **FM-828s**, one each for 52, 146 and 432 MHz, price, etc. **Panadaptor Model SA-8B Type T200 service manual** (or copy), all costs paid. Gwen VK4CB, QTHR, 07 3202 7137.

• **Dow Key relays and SK630 valve bases**. Also **AWA M2000 radio-telephone schematic** (copy) and/or manual. Must be reasonable price. S G Williams VK4YFI, QTHR, 07 4972 9871.

• **'Giant' 5 pin valve sockets** to suit 4-65, 4-125 valves. **'N' type coax connectors for LDF4-50** heliax, new or used. Malcom VK4ZMM, 07 3298 5454.

MISCELLANEOUS

• **The WIA QSL Collection** (now Federal) requires **QSLs**. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Maichett VK3TL, 4 Sunrise Hill Road, Montrose

Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

FT-101E Fault Adjustment

The following information might be of assistance to *Amateur Radio* readers who are still operating the Yaesu FT-101 transceivers.

I have used one for years without any trouble at all and know of many amateurs who are in the same boat. One thing about them is their low cost and ease of repair if they do happen to give trouble.

I recently bought a second FT-101E with the idea of using it on Slow Scan TV. Much to my disappointment, I found it to be very unstable and I also noted that the transmit and receive frequencies did not coincide. It was relatively simple to replace an IC on the regulator board and adjust the output voltage correctly, but the other problem was a bit more difficult.

The instruction manual was of no help at all regarding the difference in transmit and receive

frequencies, as was an article describing how to overcome this problem, written by G3LLL back in 1983. No doubt much has already been published on this subject but, for what it's worth, here is the method I came up with.....

1. Adjust the regulator output voltage for precisely six volts DC (VOLT potentiometer VR2).

2. Push a short length of insulated wire through the centre of the VFO socket of the FT-101E and connect its other end to the antenna terminal of a general coverage receiver roughly tuned to 9 MHz.

3. Place Tx in PTT position; Heater switch OFF; and Clarifier OFF.

4. Tune the general coverage receiver and adjust the FT-101E VFO until you hear a steady beat (note: if there is any drift, wait until things stabilise before proceeding).

5. Centralise the clarifier control to zero position and, while switching the clarifier on and off, adjust trimmer potentiometer VR3 until the beat note on the general coverage receiver does not change. The trimmer is located alongside the clarifier control potentiometer underneath the chassis.

6. Switch the Tx to MOX, and adjust zero potentiometer VR3 (located on the regulator board) until the beat note does not change while switching between PTT and MOX.

Gerry Wild VK6GW
1080 Great Eastern Highway
Glen Forrest WA 6071

ar

WIA Divisions

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Call Signs	Weekly News Broadcasts	1998 Fees
VK1	ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blemings Secretary John Woolner Treasurer Les Davy	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2	NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Geoff McGrorey-Clark Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2EO VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3	Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) Web: http://www.tbsa.com.au/~wiviac/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4	Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: wiaq@brlsbane.dialix.com.au Web: http://www.wiaq.powerup.com.au	VK4HD VK4JPH VK4WX	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 28.400 MHz SSB, 29.220 MHz FM, 52.525 MHz FM, 146.700 MHz FM, 147.000 MHz FM, 438.525 MHz (Brisbane only), regional VHF/UHF repeaters at 0900 hrs Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM, regional VHF/UHF repeaters at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5	South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6	West Australian Division PO Box 10 West Perth WA 6872 Phone 09 351 8873	President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia	VK6KZ VK6ZLZ VK6OO	146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busselton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7	Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Ron Churcher Secretary Barry Hill Treasurer Mike Jenner	VK7RN VK7BE VK7FB	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart) Repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8	(Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz).			Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times

Note: All times are local. All frequencies MHz.

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Yaesu's Done It Again



FT-920 HF/6m Transceiver With DSP

Now there's no excuse for not taking advantage of the latest advances in Digital Signal Processing, transceiver design plus the fun of 6m operation. The stunning new Yaesu FT-920 is a high performance HF/6m multi-mode receiver that provides 100W PEP output on the 160-6m bands, incredible front-end performance based on the FT-1000MP design, and a huge array of features that make it a pleasure to use. At first glance Yaesu's renowned Omni-Glow LCD screen is obvious, and its wide-angle view provides a wealth of information about the transceiver's operating status with multi-function metering, dual frequency displays and an Enhanced Tuning scale for DSP bandwidth, CW tuning, FM discriminator and more. Inside, the FT-920 is built around a rugged diecast unibody chassis which provides excellent heatsinking for the low distortion dual MRF255 160-6m FET: power amplifier.

For more comfortable operating when weaker signals are present Yaesu's engineers dedicated themselves to enhancement of real-world signal to noise ratios, and after thousands of hours of design and testing have produced an industry-leading 33.3MIPS (millions of instructions per second) processing speed DSP in the FT-920 that provides a two-parameter noise reduction system with 32 steps of front panel adjustment. This amazing system also provides dual control DSP passband tuning, DSP auto-notch filter, an amazing new transmit Digital Speech Processor, DSP mic equalisation, fast acting DSP VOX circuitry

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D 3420

Why not call for a copy of the Yaesu 6 page FT-920 colour brochure to learn more about this efficient transceiver that's without peer in its price class.



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March 1998

Volume 66 No 3

Journal of the Wireless Institute of Australia



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Amateur Radio



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Cover

Pierce Healy VK2APQ at the operating position of his magnificent amateur radio station. Pierce is an Old Timer of the VK2 Division of the WIA, a Life Member, and a past President and Federal Councillor of many years. Pierce operates HF and VHF and is still going strong in his mid-eighties.

[Photo from Neil Penfold VK6NE]

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PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

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■ Comment

Editor's Comment

Celebrating Birthdays

A news item from the Radio Society of Great Britain included in last month's *Amateur Radio* magazine stated this year marks the centenary of our hobby.

There are many names late last century credited with furthering mankind's knowledge of wireless including Heinrich Hertz, J C Maxwell, Joseph Henry, Guglielmo Marconi, and Sir Oliver Lodge.

This is not an exhaustive list and there are other names that deserve to be in any "who's who of wireless" – which is not the intention of the editorial.

However, what is very interesting about the RSGB news item is it announces that an historical reference identifies a Lieutenant M C J Dennis of Woolwich, London, as the first non-professional wireless communicator in 1898. He reportedly made the claim of being the "world's first", a proclamation that was not challenged – in Britain at least.

It would be very interesting to learn more about the "historical reference" referred to in the article, and Lt M C J Dennis himself.

In the mid-1980s the origins of our hobby were described in a WIA submission to a government inquiry as being an oddity of science around the turn of the century.

Reflecting on that statement, which has been repeated or adapted in various other writings ever since, it was clear at that time we did not know exactly when amateur radio began in Australia.

The publication *WIA Book, Volume 1* does include a chronological table which was mostly the work of Max Hull VK3ZS (SK) a long time WIA Federal Historian and Federal President.

It includes a reference to G W Selby of Malvern, Victoria, having corresponded with Sir Oliver Lodge in 1896. Lodge had two years earlier lectured and demonstrated electromagnetic force, and named a device that enabled the reading of wireless telegraphy signals.

Selby featured in an historical article in *Amateur Radio* magazine which gave him status as our first amateur wireless

Continued on page 55

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for *Amateur Radio*", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

■ News

WIA News

Roger Harrison VK2ZRH,
Federal Media Liaison Officer

The Outlook for Amateur Radio – Views Sought

The International Amateur Radio Union (IARU) Administrative Council (AC) has established a committee to look into concerns about the impact of changing technology and the Internet on amateur radio

and the possibilities for future growth and development of the hobby.

Established following the September 1997 IARU Administrative Council meeting in Beijing, held after the conclusion of the

Region 3 Conference there, IARU President Dick Baldwin WIRU appointed the "Amateur Radio Outlook Committee", with Tom Atkins VE3CDM, President of IARU Region 2, as chairman. Region 3 Director Yoshiji Sekido JJIOEY and Lou van de Nadort PA0LOU, Region 1 Chairman, were also appointed as committee members.

The Outlook Committee has a distinctly different role to the "Future of the Amateur Service Committee," (FASC), appointed in early 1996, dealing with the possible future amendment of Article S25 of the ITU Radio Regulations, which defines the Amateur Service. In addition to the Outlook Committee, last September the AC also appointed a "Constitutional Review Committee" to study the IARU's structure and finances.

Growth of the Internet and Implications for Amateur Radio

This was prepared by the IARU International Secretariat as an input document for the IARU Administrative Council Meeting in Beijing, September 1997. It is a discussion document only, and is not a statement of IARU policy.

Background. Over the last several years the loosely organised collection of computer networks collectively known as the "Internet" has grown at an amazing rate which few would have predicted. From rather simple beginnings as a way for certain US government research facilities and Universities to exchange data in order to facilitate and stimulate their creative work, the Internet has now reached into businesses, homes, industries and government offices in literally every corner of the world.

Radio amateurs, by the very nature of their interest in communications and in technology itself, have become, as a group, intense users of the Internet. As we plan for amateur radio in the 21st Century, we must consider the implications of the Internet.

Recruitment of youth into amateur radio. Historically, young people interested in science and technology found the excitement of building and operating short-wave radios to be an inducement to learn the fundamentals of radiocommunication in order to become licensed by their Administration to operate a station in the Amateur Service.

Today, such persons need only have Internet access through a computer in their home or school to have the ability to communicate with people of like interest anywhere in the world.

Technological innovation and experimentation. Historically, the transition from spark to CW, from Morse to telephony, from AM to SSB were all pioneered and popularised by radio amateurs. Today, most radio amateur systems use technology that has progressed little in recent years. Moreover, the Internet is in the early stages of providing digital voice person-to-person communication at little or no cost beyond the initial investment in hardware and software.

Therefore, the Internet can be seen as challenging Amateur Radio on three fronts simultaneously: there is no licensing requirement, it offers an opportunity to have quick, reliable world-wide communication, and it provides an opportunity to use state-of-the-art technology.

The Future.

(1) *Spectrum requirement for the Internet.* Yes, the Internet is not only a wire-line system. Those who believe that Internet (the Global Information Infrastructure or GII) must become truly universal during the 21st Century know that a combination of wire and wireless systems will be required. Within the ITU and the professional telecommunication industry, historic distinctions between wire/wireless are disappearing. Therefore, Internet already has articulated spectrum requirements of two kinds. First, some Mobile Satellite Systems (MSS) – Teledesic, SkyBridge, and Celestri – are designed for digital wide-band high data rate communication. Secondly, fixed-wireless-access (FWA) systems are seeking allocations for "radio LANs" and similar office systems. These systems have greatly increased the pressure on spectrum above 2 GHz.

(2) *The ITU and the Internet.* While the ITU was not an early adopter nor advocate of the Internet, in the last three years the ITU

has decided to attempt to become a major force in the world of Internet. In part, this was a defensive move because ITU data communication standards were running the risk of being seen by the world of users as irrelevant.

This new commitment by ITU has taken three forms: ITU is attempting to become the Top-Level-Domain Registrar and to establish a system of competitive registrars while introducing new domains. For example, ITU itself has changed from being "@itu.ch" to "itu.int" where int is a newly created domain name for an international organisation.

ITU is now sponsoring conferences related to Internet such as Interactive TELECOM in Geneva. These conferences are designed to produce revenue while at the same time reinforcing the idea that ITU is a centre for Internet information.

ITU is making extensive usage of the Internet in the conduct of the business of ITU, including selling products over their web pages, electronically distributing documents related to meetings and conferences, and accepting submissions of input documents through the Internet.

The implications for amateur radio are serious. As more and more individuals come to have access to world-wide communication through the Internet, the unique nature of the Amateur Service will diminish. As entities become reliant on Internet communication they are more likely to be convinced that universal service access is a necessary objective. As the boundaries between wired/wireless become meaningless from both a technical and a regulatory standpoint, the pressure on microwave spectrum is likely to increase dramatically.

Appointment of the Outlook Committee resulted from discussion at the AC meeting of a paper prepared at the Council's request by the International Secretariat, which is reproduced here. (Or see <http://www.iaru.org>).

The Outlook Committee's brief is: *To review the current and future state of the art in the Amateur and Amateur-Satellite Services in the light of changing technology and the Internet; to focus on technology, techniques and future developments; and to make general recommendations as to the future growth and development of amateur radio.*

The committee has a deadline of 30 June 1998 to report, and is seeking comment from IARU member societies and individual amateurs. The WIA is collecting and collating comments from WIA members and the Australian amateur community. Comments can be forwarded, by 1 May 1998, to "Amateur Radio Outlook Comments", WIA Federal Secretariat, PO Box 2175, Caulfield Junction VIC 3161, or via e-mail to rogerh@apogeegroup.com.au.

If you intend sending a comment direct to the IARU Outlook Committee, the WIA would appreciate a copy to one of the above addresses.

[Released 5/2/98]

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UK Amateurs Get New Band

The Radio Society of Great Britain's *GB2RS News* reports that the UK Radiocommunications Agency announced on 30 January a variation to the Amateur Radio Licence to include the 136 kHz band, foreshadowed late last year (see *WIA News*, January 1998, p9 *Amateur Radio* magazine).

All full UK Class A licensees are permitted to run one watt effective radiated power (ERP) between 135.7 kHz and 137.8 kHz. Permitted modes are Morse, telephony, RTTY, data, facsimile and slow-scan television.

With a total bandwidth of only 2.1 kHz, the use of most of these modes will require some technical ingenuity, the RSGB said.

Class A amateurs in the UK have had access to 73 kHz for the past year, but had to apply for a special permit to operate there. Special permits are not required for 136 kHz.

The allocation at 73 kHz will continue to be available to permit holders until June 2000.

A number of UK LF enthusiasts wasted no time in making use of the new band, which has been available to amateurs in a number of European countries for some time.

The RSGB's *GB2RS News* reports that Peter Dodd G3LDO made several cross-band QSOs on 30 and 31 January, the first with John Moore G4GVC. On 1 February, G3LDO worked G3GRO for what is probably the first two-way UK contact on the new band. Signals from Germany were also heard in the UK on 136 kHz, while G3LDO was heard by DL2KCL, but two-way contact was not made. The first two-way Swiss contact on 136 kHz was also reported in February.

[Released 5/2/98]

New Claim for 24 GHz Distance Record

Microwave pioneers Wally Howse VK6KZ and Neil Sandford VK6BHT have made a claim for a new distance record of 143 km for the 24 GHz band, extending their previous record by more than 20 km.

On 10 January 1998, VK6BHT operated portable at Separation Point, near Geraldton, while VK6KZ operated portable at Point Louise, near Green Head, north of Perth. The SSB contact, a sea path for the entire distance, was achieved under conditions not ideal for 24 GHz, with the temperature and humidity at each end of the path being 22 degrees Celsius and 98%, according to Wally VK6KZ.

Reports of 3/1, with severe QSB, each way were exchanged along with serial numbers for the Ross Hull/Field Day contests. Signals on 10 GHz were reported as solid.

A signal on 24 GHz from VK6BHT/p was initially heard at 1124 UTC (1924 WAST, just after local sunset) and the contact was completed between 1310 and 1323. A later attempt over a 172 km path was not successful.

Both stations were using about 20 mW to 570 mm diameter dishes.

The previous record, established by the same two operators, is 120.6 km, set on 19 July 1997.

[Released 25/1/98]

Price is Right for the Last Fluke Prize

The lucky last winner in the 1997 new recruit draw for the Fluke 12B digital multimeter was Mr R Price L21067, of Potts Point, who joined the NSW Division of the WIA. This means NSW Division recruits decidedly scooped the pool in collecting prizes for the 1997 membership recruitment promotion, with a total of five new members winning the draw.

The last draw was made by Henk van Velze (right), Marketing Specialist with Philips Test & Measurement, who generously agreed to support the 1997 WIA recruitment promotion initiated by Roger Harrison VK2ZRH in late 1996. Philips provided 12 Fluke 12B digital

multimeters for prizes, worth a total of \$2340.



ar

AX*ITU Call Signs Sought for 1998 World Telecommunication Day

The WIA's ACA Liaison Team has applied to the Australian Communications Authority for the use by Divisions of the series AX*ITU special event call signs again, for use during World Telecommunication Day on 17 May.

Each year, on this date, the founding of the International Telecommunication Union (ITU) in Paris in 1865 is commemorated. Each year the event has a "theme". In 1997, it was "Telecommunication and Humanitarian Assistance," and in 1996, "Telecommunication and Sport."

The amateur radio fraternity around the world joins in by operating special event stations. In Australia, the WIA Divisions have encouraged the operation of special event stations by seeking permission for these stations to use AX1ITU, AX2ITU, etc. The chief advocate for many years has been the NSW Division's Special Projects Officer, Stephen Pall VK2PS (*Amateur Radio's* "How's DX?" columnist).

World Telecommunication Day special event stations signing the AX*ITU call sign have been a long standing tradition in Australia. However, there was a 'hiccup' in 1996 about use of the call signs on 17 May that year, following a 1995 change to the rules about permission for special call signs. Previous licensing administrations had

permitted use of the call signs without the need for special annual applications by Divisions who wanted to sponsor the operation of a special event station on World Telecommunication Day.

After WIA representations, the then-SMA granted use of the AX*ITU call signs in 1997. However, the ACA's rules require an application for each event for which special call signs are sought, hence the ACA Liaison team's application, which will hopefully be successful.

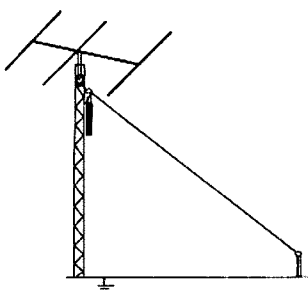
[Released 5/2/98]

'Intruders' on 40 m May Not Be!

Some non-amateur signals which may be heard on the bottom end of 40 m, below 7050 kHz, are legitimate transmissions, according to the South African Amateur Radio League (SARL), via VK4 Intruder Watch Co-ordinator, Tom Walker VK4BTW.

Apparently, 7000-7050 kHz is allocated to commercial users on a primary basis, and not to the Amateur Service, in Angola, Egypt, Ethiopia, Guinea, Iraq, Kenya, Libya, Madagascar, Malawi, Rwanda, Somalia, Tanzania and Togo.

According to Chris Turner ZS6GM of the SARL, the ITU regulations permit transmissions by commercials in these countries and are thus not intruders but, when heard, must be treated with respect and interference avoided. [Released 5/2/98]



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Hey, it's time for a little antenna experimentation! At left you see the tower and three-element beam of the 'standard' HF station. Just add a length of wire and presto, you've doubled its versatility. Okay, it's not *quite* that easy, but Steve, VK6VZ, tells you how to go...

March's R&C is the last for managing editor Len Shaw. Here's how he says goodbye...

- DXCC — HOW IT REALLY WORKS. The ARRL explains the latest changes to the DXCC program in detail.
- QSLing: is it really a case of getting blood from a stone? Here's a few hints for getting the best returns.
- ANTENNAS: Steve Ireland, VK6VZ, reckons an HF sloper can outperform a commercial vertical...
- Get connected! A crook coax connection can be just the last straw in antenna work. Do it right!
- Len Shaw's final editorial: the history of Radio & Communications and its predecessors. So long, Len!
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■ Transmitting Sidetone for the "TCF" Transceiver

Bob Kemp VK3CAY
31 Maidstone Street
Altona VIC 3108

I constructed the "TCF" SSB/CW Tx/Rx for 80 m, as designed by Drew Diamond VK3XU and featured in *Amateur Radio*, October 1993. It has given good service over the past few years on both modes.

However, when working CW, the lack of sidetone is a great disadvantage. To overcome this, it has meant running another receiver to provide the required sidetone. Another alternative was to send the CW by computer and read what was actually being transmitted from the PC monitor.

Well, I was always going to modify the set and include sidetone, perhaps using an IC such as the 555 timer; however, Dr T C Choy's design in the April 1997 issue of *Amateur Radio* provided the solution. I incorporated some of the circuitry used by VK3CCA.

Most of the additional circuitry (see Fig 1) was assembled on a small piece of matrix board 50 mm x 50 mm, which was a bit tight for room. Apart from wiring this small additional board, there are only a few small changes required to the existing unit.

At first the sidetone oscillator was reluctant to oscillate and this turned out to be because the bench power supply had a low impedance to AC which would not allow the multi-vibrator to start. Only two ICs were tried, but the results were similar. A 100 ohm resistor was added in series with the supply and all was well once again. I suspect this configuration relies on some feedback from the supply rail.

The circuit is almost identical to Dr Choy's design (refer to Fig 2 on page 17 of *Amateur Radio*, April 1997) with the exception of the keying transistor type and configuration. A small general purpose NPN transistor, a 2SC1815, was

used in lieu of the TP110 because I had one to hand.

The collector is taken to the 22 k resistor used in Drew's design, after

removing the existing wire going to the key socket, and the emitter is taken to earth. The 0.33 μ F capacitor wasn't fitted to the base mainly because of lack of space.

On the existing LM386 audio amp, two 10 k resistors were added to the input to provide some isolation, and a general purpose power diode was added, together with another 100 μ F 16 V electrolytic capacitor, so that the LM386 had a supply when receiving and also when transmitting CW. A fringe benefit is that you can use the sidetone as a practice oscillator when in CW/Receive, just like the commercial rigs.

ar

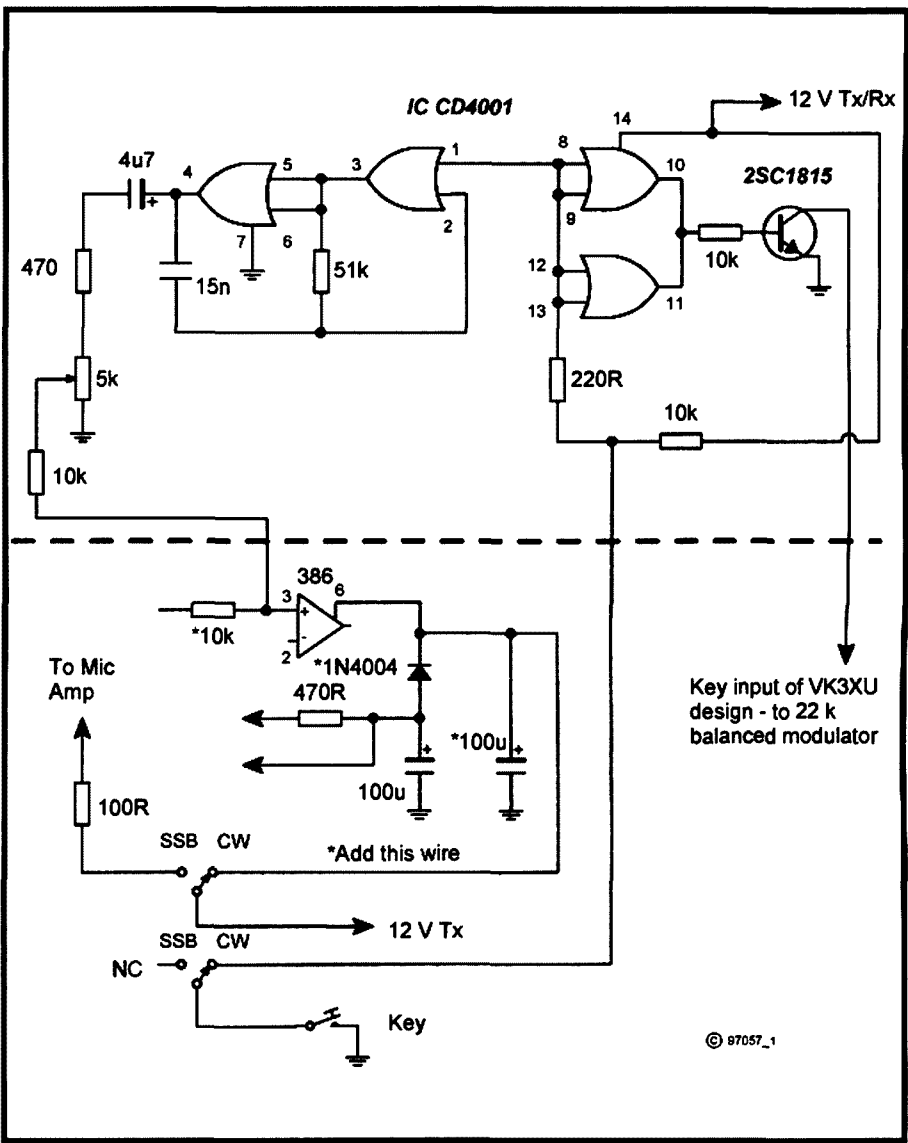


Fig 1 - Schematic of the sidetone oscillator for the TCF transceiver. The circuitry below the dotted line is part of Drew Diamond's TCF design, featured in *Amateur Radio*, October 1993. The additional components are denoted with *.

Receivers

An SSB Product Detector for "Boat Anchor" Receivers

Morris Odell VK3DOC
C/o 57 Kavanagh Street
Southbank VIC 3006

Despite advances in modern communications technology, and perhaps because of them, there is still a great deal of enthusiasm in some parts of the amateur community for older style vacuum tube gear. There are many pieces of equipment still around that were "state of the art" in their day and which are capable of performing as well as, or better, than some modern solid state rigs. Because they use vacuum tubes and have heavy power transformers on solidly built chassis, these sets are affectionately known as "boat anchors".

Many older receivers were produced before SSB became popular and universal. While a vacuum tube receiver 50 or more years old may have excellent stability, selectivity and sensitivity even by modern standards, the diode detector/low level BFO combination which was common before the 1960s is not well suited to SSB reception and usually results in distorted and noisy demodulation requiring much fiddling with the RF gain control for a barely satisfactory result.

This project was prompted by the addition of a Racal RA17 receiver to my shack. This 1950's classic was a beautiful and very sophisticated design in its time; however, its performance on SSB is particularly unsatisfactory. Racal made an SSB adapter, but they are not easy to find. While this project was built especially for the RA17, I have used similar designs for other boat anchors and the adapter can be easily modified for most sets.

The RA17, in common with most professional receivers, has an IF output socket which brings out the 100 kHz IF

signal, after the selectivity filters and IF amplifiers, especially for such an adapter. As there is no BFO output socket, I originally chose to generate an independent BFO. Once the adapter was built it became apparent that there were great advantages in bringing out the BFO signal (see below).

Circuit

Referring to the circuit, the BFO transistor Q1 is a Colpitts oscillator which uses a ferrite pot core (from the junk box) tuned by a combination of capacitors and varactor diodes for pitch adjustment. Because of the relatively low oscillator frequency, four varactor diodes are needed to get an adequate frequency swing. The lower limit of the tuning voltage is limited to about 1.8 volts to keep the varactors reverse biased at all times. The textbook "back to back" varactor arrangement would have required 8 diodes.

Feedback is purposely kept low on the oscillator to allow it to be "pulled" easily (see below). The oscillator output is isolated by emitter follower Q2. This feeds the oscillator port of an MC1496 double balanced mixer through an attenuator pad to ensure a proper injection level of about 300 mV.

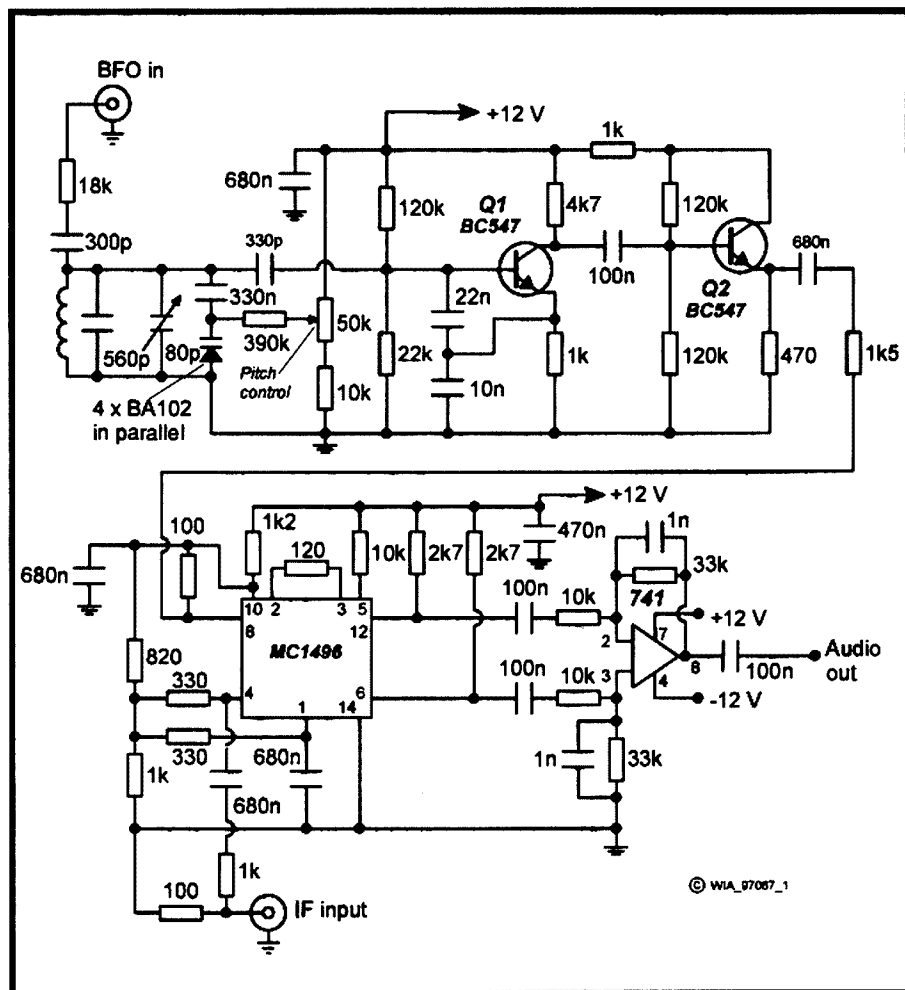


Fig 1 - Schematic of the SSB product detector.

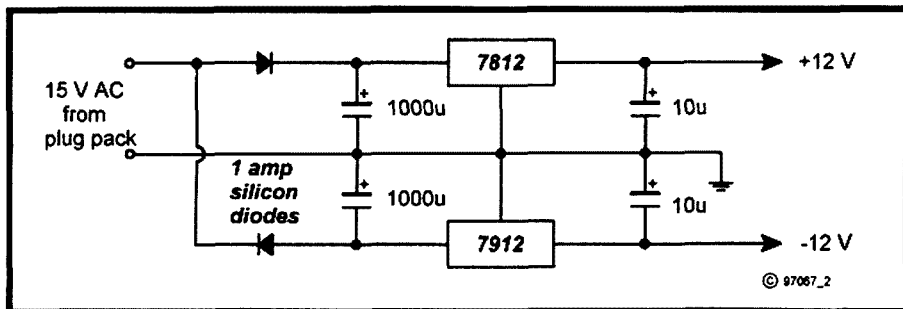


Fig 2 - Power supply for the SSB product detector.

The IF signal from the receiver is at a level of 200 mV and an impedance of 75 ohms. This is fed through an impedance matching pad with about 12 dB attenuation into the signal port. The differential mixer output drives an op-amp connected as a low gain low pass amplifier with a roll off at about 4.5 kHz. I used mine to feed an external amplifier so I did not include an audio output stage. Power comes from a 15 volt AC "plugpack" through a simple rectifier and a couple of three-terminal regulators. Power consumption is only a few milli-amps and there is enough power available for a one or two watt output chip if desired.

Modification to Receiver (optional)

One snag with this adapter is that it does not work properly on AM. Unless the BFO is in phase lock with the AM carrier, objectionable heterodyne effects occur. If the BFO is disabled, there is no output because the double balanced mixer isolates both inputs and the output only contains mixing products. A simple non-permanent modification to the receiver gets around this problem.

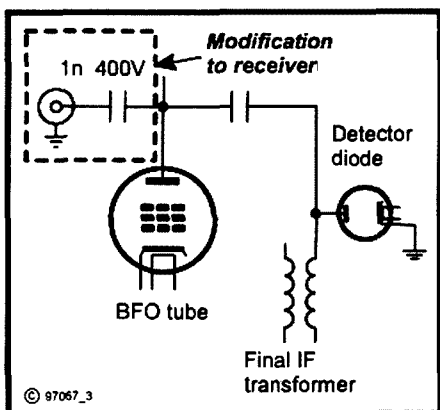


Fig 3 - Connecting the SSB product detector to the "boat anchor" receiver to use the receiver BFO.

In the RA17, as in many other receivers, the BFO is an "electron coupled" pentode which is controlled by switching the HT on and off. The plate of the oscillator valve is coupled to the detector diode through a small capacitor. This means that, when receiving AM with the BFO off, there will be a volt or two of the AM carrier on the BFO plate pin. When the BFO is on there will be several volts of BFO signal at the same point. If this signal is extracted from the receiver and connected to the oscillator of the adapter through a suitable isolating network, there are three very desirable results:

1. If the receiver BFO is on, it locks the adapter oscillator allowing pitch to be controlled at the receiver front panel and overcoming any drift in the adapter oscillator.
2. When the BFO is turned off, the AM carrier from the BFO plate in the receiver captures the adapter oscillator, allowing synchronous AM detection in the balanced modulator.
3. By unplugging the receiver BFO connection the adapter functions as an independent SSB detector with its own BFO and can be used with unmodified receivers.

I brought out the BFO plate point by the simple method of wrapping a piece of fine wire around the tube pin and passing it out through the top of the tube shield. This is connected in series with a 0.001 µf capacitor to a coaxial connector mounted on a scrap of aluminium angle secured to a nearby mounting screw (there are lots of them in the RA17!). The signal is coupled to the adapter oscillator tank through an R-C isolating network. Because the oscillator has loosely coupled feedback, it locks readily to the incoming signal.

I have designed a circuit board for the adapter using a CAD program and will be happy to send a copy to anyone sending me a SASE. The only exotic component is the oscillator coil which can be any RF inductor with a value of around 3.9 mH for 100 kHz operation, or 300 µH for 455 kHz. A disused transistor IF transformer of the appropriate frequency would be ideal. If you use a split core it is a good idea to put a drop of epoxy between the halves when you finally assemble it to avoid slight movements causing frequency shifts. The tuning range with the values given is a little over 3 kHz. The Colpitts divider capacitors should be reduced to about a quarter of their values for 455 kHz operation.

The difference in SSB reception when using the adapter is quite spectacular and converts this magnificent receiver into a useful workhorse in the shack. By adding the BFO modification to the receiver, the adapter functions "automatically" on AM as well.

ar

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of January:

L60394	MR R RIDLEY
VK6BFI	MR G FAZIO
VK6ER	MR D K JACKSON
VK6ET	MR R K JACKSON
VK6PFI	MR I F PEMBER
VK6XLR	MR R KOWALEWSKI



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■ Propagation - Technical

A Geomagnetic Storm Detector

John Moen VK2KA
6 Gordon Street
Armidale NSW 2350

Introduction

The average period of the solar cycle is eleven years, although the time between successive peaks can vary up to three or four years each way. We have passed through the trough between cycles 22 and 23. The last three years have provided an opportunity to observe some reasonably frequent geomagnetic activity, as the A index in IPS reports over the period have shown.

Although a trough is the sign of low sunspot activity, as demonstrated by the 10.7 cm flux values in IPS reports, it can also coincide with the peak of geomagnetic disturbances. This happened in 1975, near the end of cycle 20, when the sunspot number was only 25. The number of geomagnetically disturbed days was 98 (*Reference 1*).

This article cannot detail all the background information that relates to the sun and solar induced disturbances; interested readers are encouraged to obtain a copy of the IPS Radio and Space Services "User Training Manual". This explains the three indices:

1. **Ten Centimetre Solar Flux**, based on the sunspot number measured at the Ottawa Radio Observatory.

2. **Magnetic A Index**, which is involved in this article, and has the following values:

0 to 7	Quiet
8 to 15	Unsettled
16 to 24	Active
25 to 35	Minor Storm
36 and above	Major storms

3. **Ionospheric Index**, a measure of the average level of the ionospheric critical frequencies (radio propagation) on a given day.

When I read an article by the Swedish astronomer G Flodqvist in *Sky and Telescope*, October 1993, titled

"Detecting the Polar Lights", I sought the help of fellow radio amateur, Jon Lindstadt VK2WF, to build a similar device. The physical arrangement of components is identical with the original. The electronic circuitry has been modified somewhat by VK2WF to provide an alarm instead of using the pen recorder; and to make the unit operate from a single supply (12 volts). Mr Flodqvist has kindly consented to my references to his article.

The best way to introduce the subject

is to quote from his description of the unit. "Ordinary compasses are the best known sensors for the earth's magnetic field. At the sensitivity of a compass this field is very stable. Ionospheric disturbances add subtle variations, and we need a magnetometer to detect them. Luckily, one can easily construct one from a compass by 'adding' an artificial magnetic field to it. The field should be the same strength as the earth's but be of opposite sign, thereby effectively cancelling the stable field. Any minor changes due to ionospheric conditions will then turn the compass needle noticeably."

The principle involves the use of a compass needle to interrupt a light beam from an infra-red LED to a photo-transistor (infra-red sensitive). The changed current through the photo-transistor is then amplified and displayed on a micro-amp meter. The output from the amplifier also controls the current through the solenoid, and therefore the artificial magnetic field. The polarity of

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420-450 MHz is wanted by Australian commercial interests

RF emission regulations threaten handhelds, mobile rigs, and suburban home stations, with bureaucratic limits

More of 7 MHz is wanted by global broadcasters

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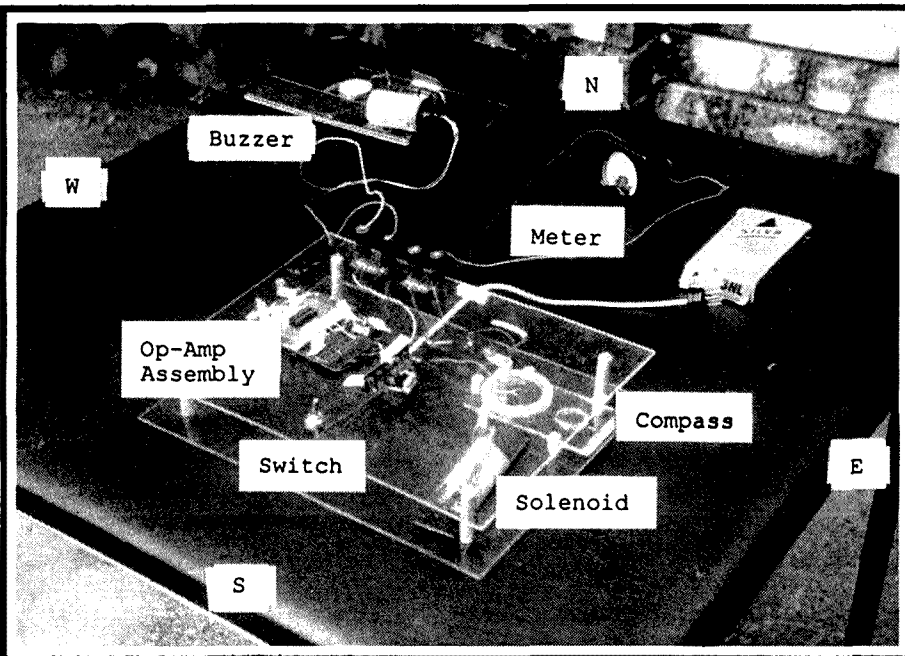
WIA action has: ■ cut the cost of licence fees, ■ cut fees on beacons and repeaters, ■ improved licence conditions, ■ retained access to 50 MHz and 576 MHz; and more.

The WIA maintains representation at World Radio Conferences, and at home, to the ACA and on the Radio Communications Consultative Council. Strength in numbers. Subs help pay.



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The Geomagnetic Storm Detector set up for operation.

this field opposes the movement of the compass needle. The whole circuit comprises a phase-locked loop.

Construction

Commence by preparing the two sheets of Perspex, drilling holes for the four wooden spacers (12 mm dowel), the LED (bottom sheet), the photo transistor (top sheet), the potentiometer (R1) shaft, the switch and the four output spring loaded terminals. The photo transistor must be placed directly above the LED and spaced no more than 40 mm from it. Once the position is established, four posts made from balsa wood are grooved to take the compass, and glued in position so that the south pointing needle will just enter the light beam path. A fifth post can then be glued to provide the stop position.

Four posts, grooved as before, must also be provided as slots to house the frame holding the solenoid, at right angles to the line of the compass and about 50 mm from the needle tip.

The solenoid is made from a large reed (or other suitable type) relay that has had the reed replaced by a soft iron rod as the core. The writer used a bolt of suitable diameter, with the nut cemented into one end of the coil former, so that later adjustments can be made. The relay is best mounted on a small section of circuit board, thus constituting the frame referred to in the previous paragraph.

The smaller components are mounted on a suitably sized circuit board, ensuring that the trimpots are situated at one end, handy for final adjustments. Some builders may prefer to position the board above the top plate if modifications are required. A test point could also be provided for measuring the voltage at pin 7 of the op-amp.

The meter should be placed at least 500 mm from other components to avoid its magnetic effects. The spring loaded terminals are provided for this purpose.

Alignment

After switching on, measure the output voltage at pin 7 test point - it should be close to 12 volts. Blocking the light from the LED should reduce the voltage close to zero. If successful, switch off, and place the compass between the LED and the phototransistor, such that only the south pointing needle tip (white) will interrupt the light beam when it is in the east west position, 90 degrees from magnetic north.

Align the instrument so the edge of the Perspex sheet marked "N" in the diagram faces magnetic north (red tip of needle). Slide the solenoid from its frame into the balsa wood mount, and switch on the power again. This will turn the needle.

Experiment with varying distances of the frame from the compass needle until the latter cuts the light beam and eventually locks at 90 degrees from magnetic north. If the alignment is not satisfactory, try reversing the polarity of the solenoid terminals. Refine the adjustment of the meter to its centre

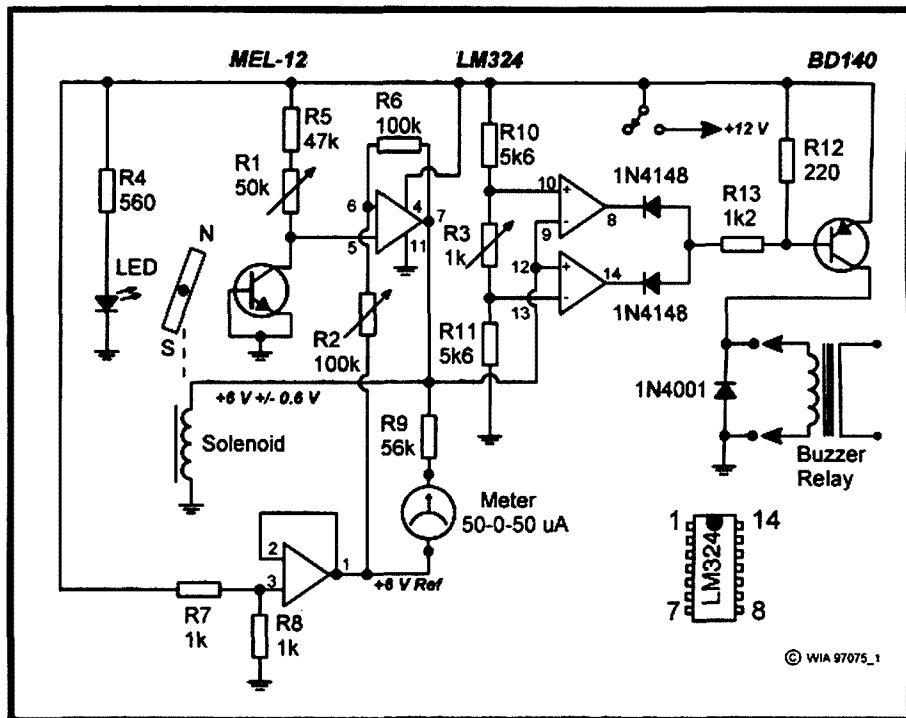


Fig 1 - Schematic of the Geomagnetic Storm Detector.

reading position, using the iron core in the solenoid and the trimpot R1. Use the trimpot R2 to adjust the gain of the amplifier, and the trimpot R3 to set the threshold of the buzzer relay.

Operation

The meter needle oscillates during a magnetic storm or similar disturbance. Sensitivity can be tested with magnets having various strengths. To maintain a consistent standard, the writer uses a small horse shoe magnet. When this is placed one metre from the compass region, it only just triggers an audible response. A large horse shoe magnet from an old car magneto at a distance of five metres will do likewise. Replacing the 50 micro-amp meter and its 56 k resistor with a pen recorder and matching resistor would provide more accuracy and detail.

Earth has a steady magnetic field of about 50000 nano-Tesla (0.5 gauss). At Australian mid latitudes the instrument is not sensitive to the normal small diurnal variations in the Earth's field, but is responsive to minor and major storm activity - as has been found over recent years by the writer.

A minor storm can increase or depress the earth's field by about 30 nT or so, a small percentage of the total field. Australian figures are released by IPS Radio and Space services from their source at the Learmonth observatory in Western Australia.

Magnetometers that have the needle in the horizontal plane are basically of three types:

1. **Deflection magnetometer**, when the angle of deflection produced by the external force is measured directly.

2. **Vibration magnetometer**, when the needle is given a small angular displacement from its equilibrium. The period of the oscillation can indicate the value of the applied field.

3. **Torsion magnetometer**, when a magnetic field is applied to act at right angles to the needle. It would appear that the torsion type applies in the Flodqvist choice.

The current drain of the instrument is 50 milli-amps so power can be taken from a 12 volt car battery. In my case, it is a small (sealed) gel battery as described in the parts list. A trickle

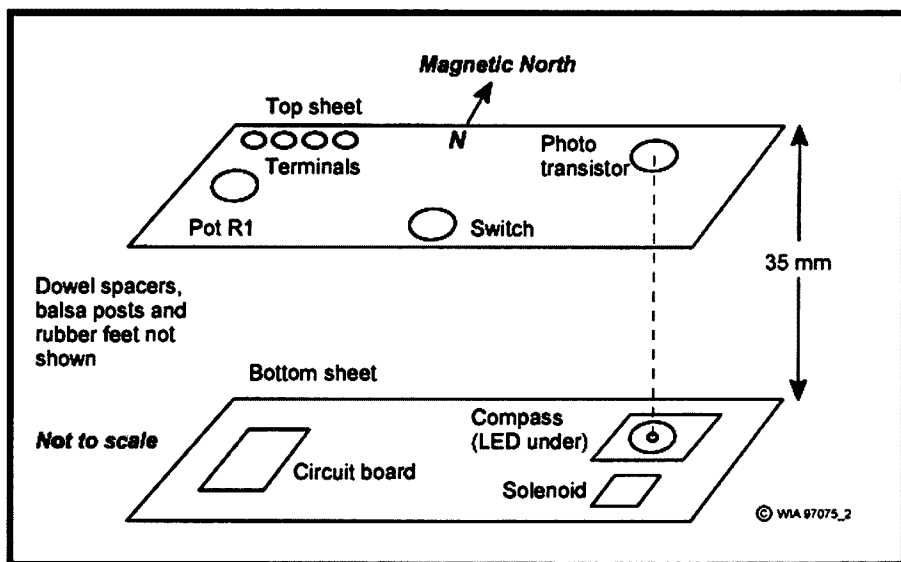


Fig 2 - General layout of components of the storm detector.

charger supplying 60 mA has proved to be quite satisfactory. A separate small 9 volt battery (216) powers the buzzer.

The instrument is housed in a sturdy cardboard box to protect it from sunlight. The box rests on a solid base, away from metallic objects and possible sources of vibration.

Australian observers may not have the opportunity to enjoy auroral sights like our Swedish counterparts, but they can still participate in detecting movements in geomagnetic activity and correlate this with radio propagation.

Parts List

- 1 Magnetic Compass type Silva 3NL (transparent housing)
- 1 Op-amp, LM324
- 1 Toggle switch SPDT (mini)
- 1 IR LED, CQY89a/LTE4208C
- 1 IR phototransistor, MEL-12
- 1 Transistor, BD140
- 1 Diode, 1N4001
- 2 Diodes, 1N4148
- 1 Mini relay 12V, normally open
- 1 Mini-buzzer, 6-9 V Inter Tan 273-054A
- 1 Battery, 9 V type 216
- 1 Solenoid (coil of a dismantled reed relay)
- 1 Nut and Bolt for iron core in solenoid
- 1 Meter, 50-0-50 micro-amp
- 1 Power supply, Apollo sealed lead acid batter (gel) 12 V 2.7 Ah
- 1 Trickle charger for gel cell
- 1 Circuit board for IC

- 1 Circuit board for solenoid mount
 - 2 Perspex sheets 5 mm thick 250 mm by 200 mm
 - 4 Rubber feet
 - 4 Spring loaded terminals.
- Dowel, stick spacers, balsa wood spacers & mounts as required
- Resistors
- R1 50 k potentiometer
 - R2 Trimpot vertical 100 k
 - R3 Trimpot vertical 1 k
 - R4 Metallic film 560 ohm 0.25 W
 - R5 Carbon 47 k 1.0 W
 - R6 Metal film 100 k 0.25 W
 - R7 Metal film 1.0 k 0.25 W
 - R8 Metal film 1.0 k 0.25 W
 - R9 Metal film 56 k 0.25 W
 - R10 Metal film 5.6 k 0.25 W
 - R11 Metal film 5.6 k 0.25 W
 - R12 Metal film 220 ohm 0.25 W
 - R13 Metal film 1.2 k 0.25 W

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1. G Flodqvist, "Detecting the Polar Lights", *Sky and Telescope*, October 1993
2. W J Duffin, *Electricity and Magnetism*, 1965
3. IPS Radio and Space Services, "The Date of the Next Solar Minimum", *Amateur Radio Action*, May 1994
4. IPS Radio and Space Services, *User Training Manual*, December 1985
5. R J Thomson, *The Sun and Solar Induced Terrestrial Disturbances*
6. USAF, *Handbook of Geophysics and the Space Environment*

■ Technical

Technical Abstracts

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 Caulfield Junction VIC 3161

Deltaloop Beam

A simple two element Deltaloop beam appeared in the *Eurotek* column of Erwin David G4LQI in *RadCom*, November 1997. The design was originally published in *Old Man*, October 1995, by Ruedi Werner HB9RZ.

The design is based on the HB9CV designs published and patented in the 1960s. There was a two element design known as the "HB9CV Beam", and a quad design known as the "Swiss Quad". The original article was published in *The RSGB Bulletin* in June 1964 by R A Baumgartner HB9CV.

The Deltaloop design shown in Fig 1 uses an H frame at the top of the metal support pole. The H frame boom is made out of non conductive material such as

wood, bamboo, or fibreglass tubing; the sloping sides are wire. In the prototype on 18 MHz, HB9RZ used aluminium tubing for the tops of the loops. He found that this required an increase of 6% on all loop side lengths over the wire loop lengths given in the table. The wire loop lengths are given in Table 1.

The feed harness is shown in Fig 2. The loops are terminated on coax sockets mounted on a metal plate attached to the support pole. The phasing line uses RG-213 coaxial cable. To get the required 135 degree phasing, opposite ends of the loops are fed and an 1/8th wave coaxial phasing line is used. The coaxial fittings should be weatherproofed with either coax-seal or self amalgamating tape.

The beam can be set up initially with the feed point at eye level. The director

should be set 2.3% above the operating frequency and the reflector 5.7% below the design frequency. Raising the beam to full height should result in only a small shift in operating frequency. It is best to tune slightly high in frequency to compensate for this and any shift which may be caused by a rainy day.

The beam on 18.135 MHz had an SWR of 1.1:1 and a front to back ratio of 12-15 dB. The gain was 8 dBi (which is about an S point over a dipole) which is quite a respectable performance for a simple and cheap antenna. A successful 50 MHz version was built by HB9PWQ.

Ugly Construction Tip

A means of producing strips of solder pads for ugly construction projects, including the use of surface mount components (SMD), appeared in the *Technical Topics* column of Pat Hawker G3VA in *RadCom*, November 1997. The idea came from D M Mackenzie GM4HJQ.

Strips of Veroboard, or other strip board, are cut and used as solder pad strips. The strips can be glued to a base board of plain copper laminate or blank PC board. Super-glue will be suitable and quick. Busses can be provided by

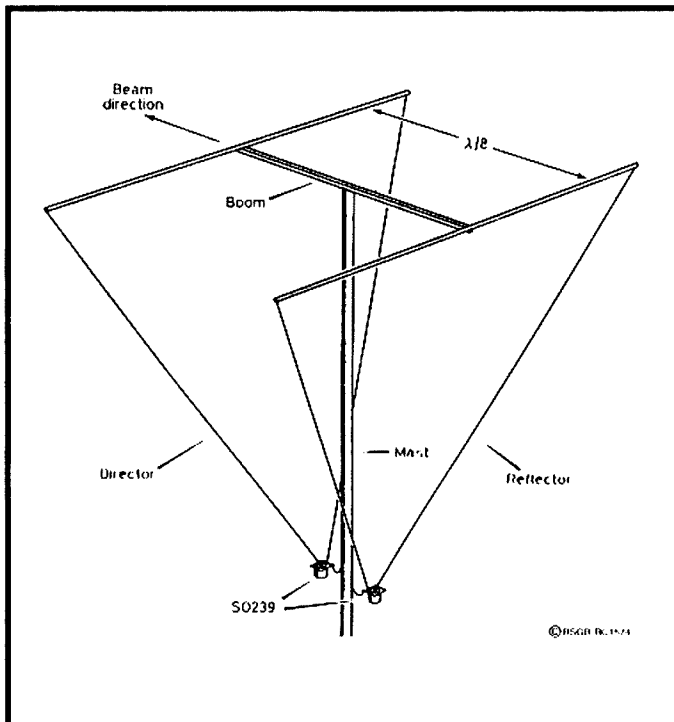


Fig 1 - HB9RZ beam with triangular loops spaced 1/8 wave at top and with no spacing at the bottom.

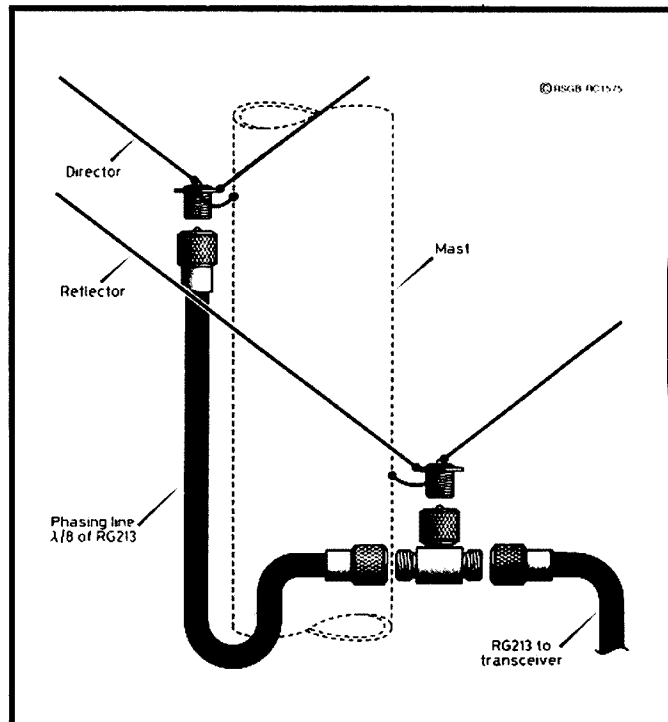


Fig 2 - Phasing feed harness for beam. Note the connections carefully as they are part of the phasing arrangement.

Table 1 - Dimensions of HB9RZ Beams with Wire Elements and Non-Conducting Booms.

Band	30 m	20 m	17 m	15 m	12 m	10 m	6 m
Design Frequency MHz	10.12	14.25	18.14	21.3	24.96	28.5	50.15
Director Total Length m	28.99	20.60	16.18	13.78	11.76	10.4	5.91
Reflector Total Length m	31.38	22.28	17.51	14.91	12.72	11.31	6.42
Boom Length 1/8th Wave m	3.71	2.63	2.07	1.76	1.50	1.32	0.75
Phasing Line 1/8th Wave RG-213	2.44	1.74	1.36	1.16	0.99	0.87	0.494

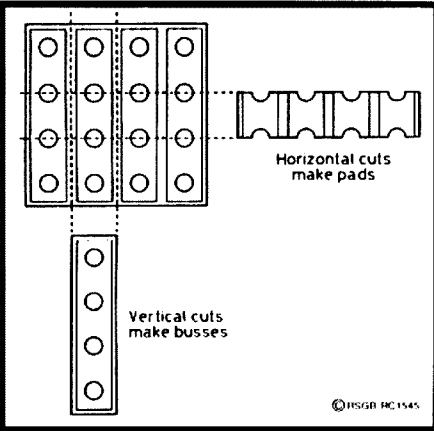


Fig 3 - Cutting Veroboard into strips of pads or busses.

cutting strips length-wise. The cutting of pads and busses is shown in Fig 3.

Surface mount components can be soldered between adjacent pads or from a pad to the ground plane. Components can be simply and rapidly mounted and intertwined.

10 GHz Bandpass Filter

A simple 10 GHz bandpass filter capable of giving good performance appeared in *QEX*, July 1997. The author was Zack Lau W1VT.

The filter uses a short length of WR-90 wave-guide. The performance is such that the filter has low insertion loss and can improve image rejection when using a 144 MHz IF at 10 GHz.

The filter is shown in Fig 4 and the length of the piece of WR-90 wave-guide is 1.5 inches. The cavity is formed by soldering brass sheets to the ends of the wave-guide section used. Two posts down the centre line create a pair of coupled cavities. The coupling is set by the diameter of the posts. Small quantities of brass sheet, strip, tube, and rod are available in larger hardware shops and are called hobby brass.

A drilling template is shown in Fig 5. The tuning screws are shown as the USA type 4-40 but local metric or imperial

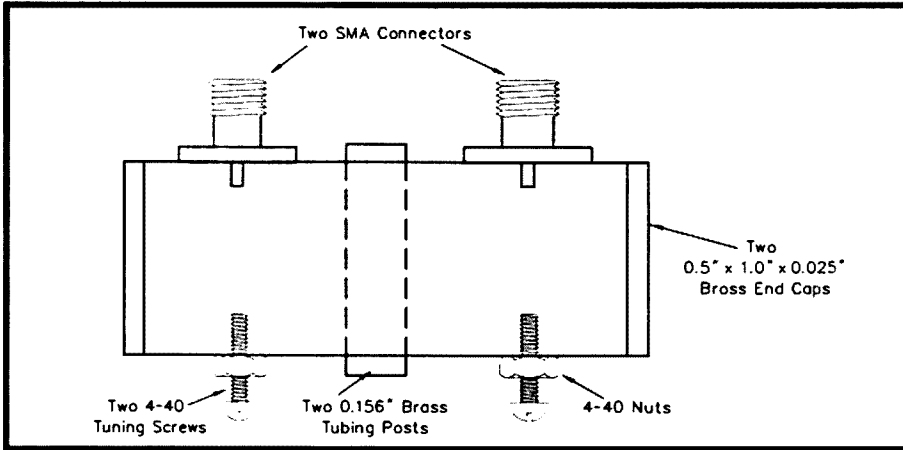


Fig 4 - 10 GHz two cavity bandpass filter.

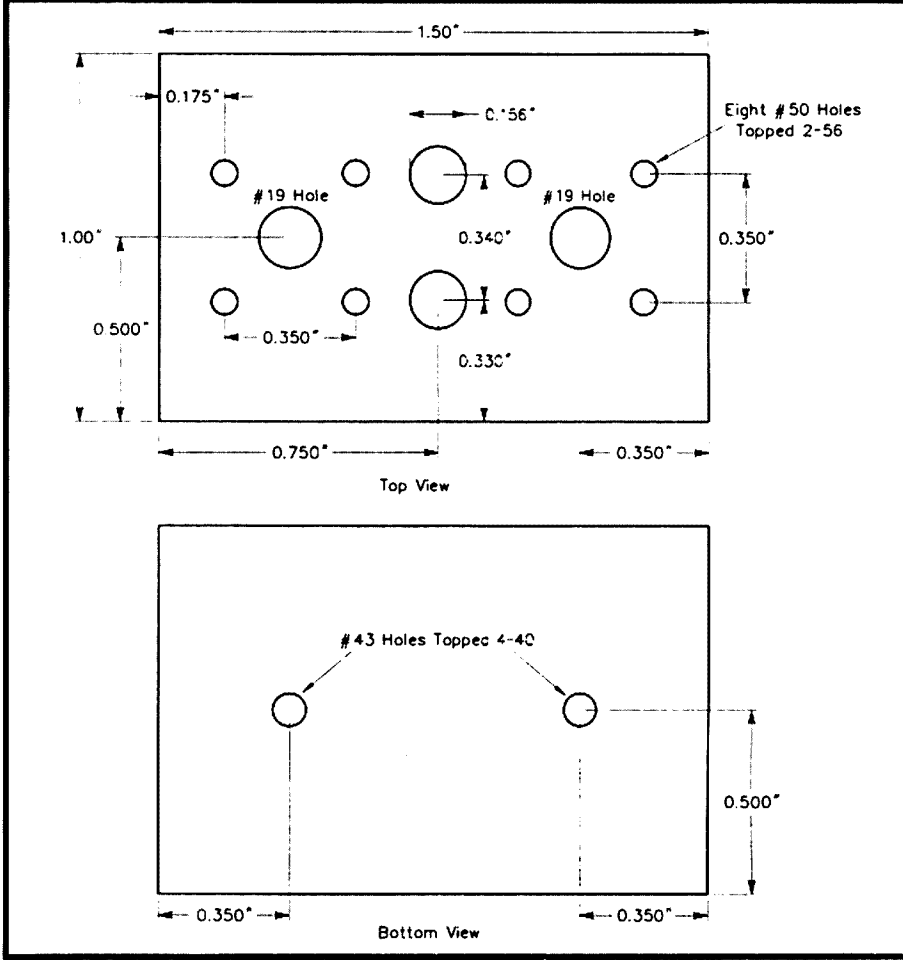


Fig 5 - WR-90 wave-guide drilling diagram.

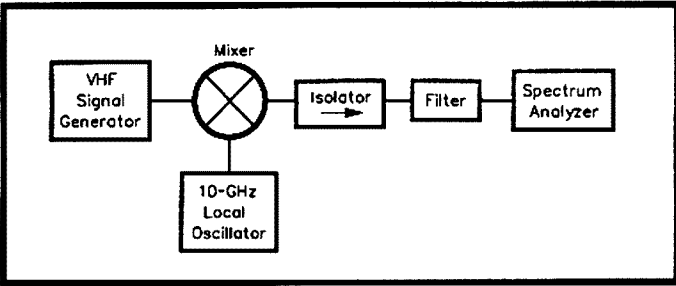


Fig 6 - Preferred filter alignment test fixture.

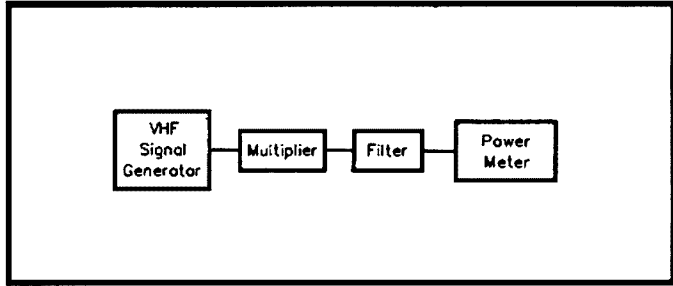


Fig 7 - Alternative filter alignment test fixture.

equivalents can be used. They will need adjustment, in any case, to tune the filter. The probes coupling in and out of the filter could be just the SMA connector centre probes. However, Zack Lau fabricated spacers from shim brass to allow fast adjustment of the probes without the need for tedious filing of the SMA connector centre conductors. The probe depth varies the coupling and the insertion loss and interacts with the tuning.

Probe length is 100 mils for a wider filter and 80 mils for a narrow filter. These lengths are shortened by the wave-guide wall thickness and the shims. Only 30-50 mils pokes into the cavity. The narrower bandwidth version used 3/16th inch posts and the probes were 80 mils long. Remember that these dimensions are not metric. Tune up was done using the set up shown in Fig 6. An alternative is shown in Fig 7. The set up of Fig 6 is

recommended as it is somewhat simpler to use and there are less problems with interactions. The design shown in Fig 4 had 0.6 dB of insertion loss and a 3 dB bandwidth of 106 MHz at 10 GHz. Image rejection with a 144 MHz IF was 33 dB. Another filter built using 3/16th inch posts had an insertion loss of 1.3 dB and a 3 dB bandwidth of 36.7 MHz, and gave 47 dB of image rejection for a 144 MHz IF.

Repeater Link Remote Mute for a Voice Repeater

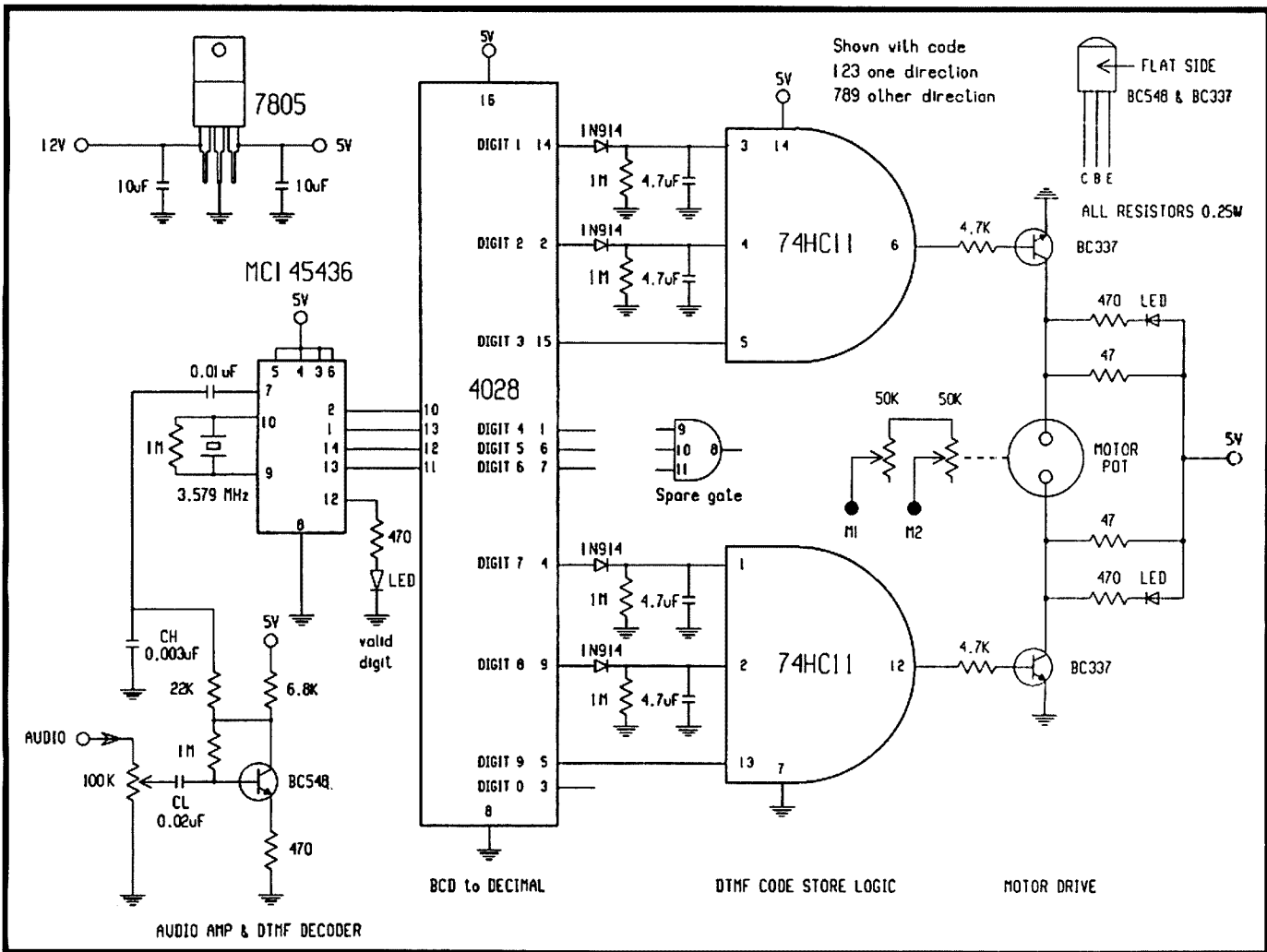
Will McGhie VK6UU
 21 Waterloo Crescent, Lesmurdie 6076
 Packet: VK6UU @ VK6BBR
 E-mail: will@vale.faroc.com.au

If you have ever maintained a voice repeater, you would have had the experience of the mute on the repeater's receiver remaining open and timing out the system. If not, then consider yourself lucky. Often this mute condition requires a site visit. This is not a great problem if the site is close by and easily accessible, but most repeater sites are a considerable distance away with difficult access. Many years ago I designed a remote controlled mute that used a digital stepping integrated circuit. It worked but was a little complicated in operation. Model 2 uses a motor-driven potentiometer. Ever since I first saw these motor-driven pots on the market, the thought has been to develop a circuit to control one for use as a mute on a repeater.

The Motor Pot
 These motor-driven pots are a dual gang 50 k pot driven by a small, three to six volt DC motor and a few simple plastic gears. The pot can also be turned by hand, as it incorporates a clutch. The pot turning is reversed by reversing the DC voltage to the pot. Several electronic stores sell them, including Dick Smith and Jaycar. The pot fits a normal size hole with the motor and gears at the back of the panel to which the pot is attached.

The Circuit
 Control of the motor-driven pot is via DTMF. The entire circuit runs from a regulated five volt supply, including the pot. A DTMF decoder IC decodes the DTMF tones into BCD. Note the inclusion of the single transistor amplifier in the audio input path to the

DTMF decoder. This may not be required but offers a non-loading high impedance input and the inclusion of audio frequency adjustment. It is most important to have a flat frequency response for the audio tones fed to the DTMF decoder chip. This IC can tolerate some frequency level difference between the low tones and the high tones, but not a lot! The 0.003 µF capacitor (CH) and the 22 k resistor provide some high frequency roll-off which is required by the repeater receiver with which I used this circuit. This may not be the situation with your receiver; it may even require low frequency roll-off. If so, remove CH and reduce the value of CL. A simple test of the frequency response between the lowest and highest



Schematic of the remote mute for a voice repeater. (drawn by Will VK6UU)

DTMF tone is to simultaneously push buttons 1 and A on the DTMF tone pad for the lowest single tone, and buttons A and D for the highest tone. If you only have a 12 digit key pad then push 1 and 3 for the lowest tone and 3 and # for the highest. When two keys are pushed simultaneously a single tone is heard and the relative levels between the lowest and highest tones can be measured. Adjust the frequency response so the lowest and highest tones are the same level. If the difference between the tones is more than about 6 dB (twice the voltage), the DTMF decoder chip will not decode.

The decoded DTMF tones are BCD output and have to be decoded further to the actual decimal digits. This is done in the 4028 IC. Note that I have only used a 10 digit decoder chip to do this, so only digits 1 through 0 are available. This was done to save space as the full 16 digit decoder IC is much larger.

Next comes the code store logic. Three digits are required to rotate the pot in one direction and three different digits to rotate the pot in the other direction. To produce a logic high output from the 74C11 IC, all three input gates must be high. However, you cannot push all three keypad buttons at the same time, so the first two digits have to be stored for a short time, about two seconds.

On pushing the final digit in the three digit sequence the output of the 74C11 goes high and the corresponding BC337 is turned on. When the third digit is pushed and held down, the pot will rotate for the duration of the time constant of the 1 M resistors and 4.7 μF capacitors used with digit one and two. This is more than enough time to give the mute pot a nudge one way or the other.

In the example shown, digits 1 and 2 and 3 rotate the pot in one direction and digits 7 and 8 and 9 in the other direction.

You can use any code combination you like but it is best to use three completely different digits for clockwise and counter clockwise rotation.

How to reverse the voltage to the motor was the interesting bit; particularly how to make it simple? Looking at the circuit, the two 47 ohm resistors are the solution. With no drive to either BC337, five volts is fed to each side of the motor through each of the 47 ohm resistors. When one of the BC337s is turned on, the corresponding live volts to that side of the motor is shorted to ground, the 47 ohm resistor limits the current, and the motor turns in one direction. The opposite happens when the other BC337 is turned on. Note that the motor current flows through the opposite 47 ohm resistor and results in about 3.5 volts being applied to the motor.

Extra Information

The prototypes were constructed on Tandy isolated pad vero board. The LEDs help in fault finding. The LED attached to the MCI45436 DTMF decoder IC is a valid digit output and turns on whenever the IC decodes a valid DTMF tone pair. The other two LEDs show there is an output from the digit code store IC.

All logic levels are active high. Push a

digit and the corresponding decoded output from the 4028 goes high, as does the output from the 74C11. The circuit draws 11 mA when the pot is not being driven and less than 150 mA when the pot is being rotated. The pot requires about 40 mA.

Note from the circuit that I wired the two pots together. I found just using one 50 k pot on its own would not correctly operate the mute in an FM828; a

resistance of more than 50 k was required. By wiring the pots as shown, a 100 k pot is achieved between M1 and M2, but any combination between 25, 50 and 100 k is possible depending on your requirements.

I trust that this circuit works for you and saves many a trip back to a repeater site just to give the mute a nudge.

ar

Direction Finding Misbehaving EPIRB

Ron Graham VK4BRG
PO Box 323
Sarina QLD 4737

At 2 pm (approx) on Friday, 7 February, Airservices Australia (AA) phoned saying that a Hercules had reported an activated Emergency Position Indicating Radio Beacon (EPIRB) in the area and asking if I could hear any signal on 121.5 MHz (AA maintain a data base of people who have direction finding capabilities on beacon frequencies).

No signal was heard.

A short time later they called again saying that a police sergeant who had left Mackay to investigate had been involved in a traffic accident – the sergeant being OK, but not the vehicle! They then asked if I could go to an area north of Sarina (21 degrees 22 minutes south, 149 degrees 07 minutes east) where a satellite pass had indicated the offending beacon's location.

I could visualise a problem with me being in the field and not being able to communicate with AA in Brisbane. So I made arrangements with Wally VK4DO to handle the phone communication to Brisbane, with us using the Mt Seaview amateur radio repeater to maintain contact.

Nothing was heard from a vantage point overlooking the above area. AA then asked if I would stay in the area and that two choppers were on the way. I used this time to travel around the Munbura area looking for a signal. One chopper

was observed to the north where it turned around and headed off into the distance in the direction of the southern extremity of Mackay.

At 3.45 pm I was back on the Sarina Homebush Road when a message was relayed to me asking me to proceed to Dunrock (close to the coast) where the chopper had heard signals.

At 4.15 I had searched around the Dunrock area. I had mentioned that the Hay Point Harbour Master's office provided a good vantage point in that area. It was suggested that I proceed there. However, as I was in the area I decided to search around McEwens Beach area as it was a fair way back from Hay Point. Nothing was heard so I proceeded to Hay Point.

Back Home?

At 5 pm at the Harbour Master's office nothing was heard. At this stage I was convinced that the beacon had been turned off. Previously the chopper had reported hearing the signal and that it had ceased abruptly. So I headed home via a road close to the coast with the idea of having a general listen on the way.

At 5.15 pm I was called to say some new information had come to hand. A chopper had located the origin of the signal to be on either the *Belyando* or *Broadsound*, two tugs in the tug harbour, and that I was to return to the Harbour Master's office.

At the office they were trying to contact the owners of the tugs, BHP Marine, without success. I was told that a security gate blocked the road to the tug harbour. However, I decided to go to the general area where I did hear a weak signal with no audio. The chopper had also reported the lack of audio. I moved around the area, but didn't hear the signal. So I returned to the original spot. Now there was no signal!

I was deciding my next move when the signal re-appeared, weak, with audio for about five seconds. After a minute or so the signal with audio appeared again, this time for about a minute. I convinced myself that the signal was coming from where there was a number of vessels tied up in the tug harbour; but in the same line, about a mile away, a large ship was loading at the end of the main wharf.

AA advised that contact had still not been made with the tug owners and suggested that I had a meal break. I used this time to travel home for some back up equipment.

I returned to the Harbour Master's office where I was told that the owners had been contacted at 6.30 pm. I proceeded to where I had heard the signal previously; nothing heard. I climbed past the first security gate which got me to within 50 metres of the vessels in the harbour. No signals were heard from that distance, or from along the area that I had walked.

I returned to my car, reported the above and suggested that maybe the owners had already been found, and turned off the offending beacon.

Skipper

At this time a car appeared with two people connected with some of the tugs.

One was the skipper of the *Belyando*. We proceeded through the two sets of security gates and onto the *Belyando*, a sister ship of the *Broadsound*. They were moored on either side of a large steel jetty complex.

Weak signals were heard in an area on the jetty and between those two tugs. We checked an EPIRB in the wheel house and one on the railing outside the wheel house. There were also EPIRBs fitted in two life rafts. No signal source was found. The *Broadsound* was checked with the same result.

However, the weak signal remained just audible on the jetty between those two tugs. A search for signals possibly originating from two other large tugs and four small line vessels proved negative. By this stage I realised something "very strange" was happening so I looked around under the wharf area, and quizzed the skipper, thinking a crew member might have left an EPIRB below deck, etc. It was impossible to get a

bearing on the weak signal with the masses of metal around – the two tugs and the large metal jetty structure.

While talking about options the signal increased in strength, allowing me to DF the source as the EPIRB on the railing of the *Broadsound*. The skipper went back on board and I remained on the jetty adjacent to the EPIRB. The EPIRB in question was also fitted with a light. It had a three position switch, OFF – ARM – TEST. It is normally left in the ARM position and is automatically activated when it is removed from its cradle. In this case, a signal was still being generated when it was turned OFF. No signal at all when turned ON. The tug skipper needed some convincing that the unit was faulty, but when I pointed out that the light was not coming on when it was switched to the ON position it became fairly obvious.

We discussed various ways of dealing with the situation and eventually took the unit to their workshop where it was

dismantled and I disconnected the battery. We were all amazed to see a quantity of water in the unit, no doubt the cause of the intermittent operation, operation at various output levels and the incorrect operation of the three position function switch.

At 9 pm I was back home after travelling almost 300 km.

Footnote

I manufacture and supply to various State and Federal Government Departments, Air Sea Rescue Groups, etc a set of portable DF equipment specifically designed to assist those authorities in locating activated emergency beacons. Interestingly enough, the design is based on that of some two metre amateur fox hunting equipment. No doubt rare these days, but this nevertheless shows that amateur radio equipment can still have applications in the commercial/public assistance fields. ar

■ Book Review

Lew McCoy on Antennas

Publisher: CQ Communications, Inc
Author: Lew McCoy W1ICP
Reviewed by: Evan Jarman VK3ANI
ISBN: 0-943016-08-8
Paperback, 280 by 217 mm, 112 pages

With a subtitle of **Pull Up A Chair And Learn From The Master**, you get the feeling that this book is like a fireside chat.

Lew McCoy, in his eighty plus years, has acquired a wealth of knowledge. He worked with the ARRL for over thirty years, retiring as Technical Editor.

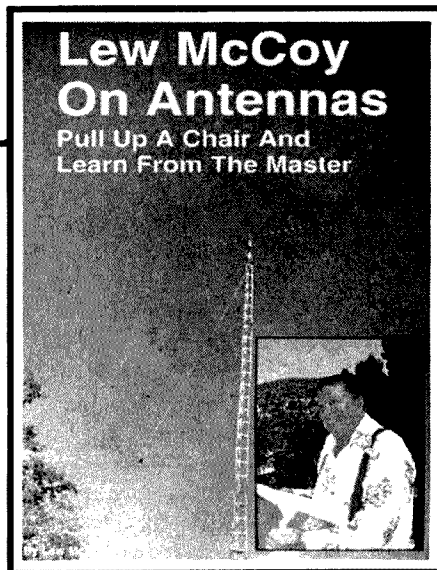
The book starts with some of the concepts in transmission lines before proceeding onto antennas. Many of the technical concepts are reduced to similarities like a flow of liquid in a pipe. This book does not claim to be a rigorous analysis.

The chapters on antennas cover HF, including a chapter on mobile antennas. There is also a chapter on VHF. There is very little in the way of set designs, the author preferring to rely on his experience to point out the flaws and

virtues in various types of antennas. He also describes where compromises can be made between opposing characteristics.

In some cases, references are given to benchmark articles in amateur radio magazines as the best start in one facet of a particular type. He then goes on to discuss other facets of the design. The trap beam is such an antenna; his reference to the first article published is still recommended reading for the home brewer (Buchanan W3DZZ, *QST*, June 1955). One article is published.

The author draws on considerable experience and quite often describes the work that went on when he was involved. This book takes a very pragmatic approach to antennas. It is devoid of any mathematical treatment. Lew McCoy is just passing on some of his experience in



an almost narrative style. It is more a simplified guidebook from someone who has been there and done that.

The book is obtainable from Daycom Communications (stock number BR94) for \$28. ar

■ Book Review

Royal Air Force Beam Benders

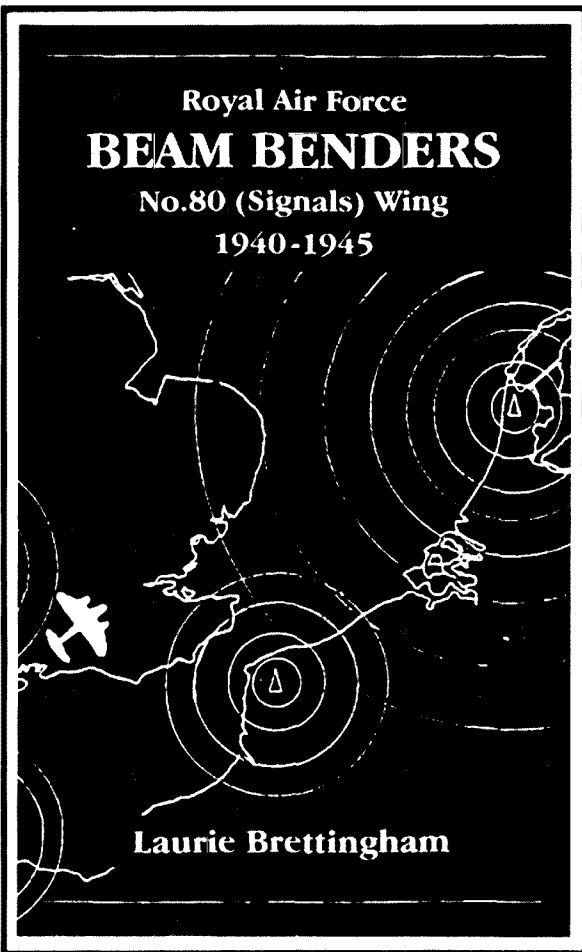
No 80 (Signals) Wing 1940-1945

Publisher: Midland Publishing (Midland Counties Publications Unit 3, Maizefield, Hickley, Leics LE10 1YF, UK. Phone 01455 233747)

Author: Laurie Brettingham

Reviewed by: Gil Sones VK3AUI

ISBN: 1-85780-040-0



V Jones chronicled many of the developments and their deployment.

A recent book by Laurie Brettingham records the history of those who carried out the investigation and later the masking, jamming, and bending of the navigational bombing beam systems. The same people also operated deception schemes involving mock cities and industrial complexes made up of pyrotechnic devices devised by movie film special effects personnel.

The book tells the story of the setting up and operation of a specialist unit formed to carry out unusual tasks in conditions of great secrecy. Staff were employed on a strict "need to know" basis and often had little idea of how their job fitted into the bigger picture or what other operations were involved.

Masking HF navigational beacons is one lesser known technique which was carried out by this specialised unit. The navigational beacons which enemy bombers used to return home to their bases were received and re-radiated in such a way that the crew would be unable to distinguish between true and false bearings. The result was confusion and often the loss of bombers which strayed and were forced to land in unfamiliar territory through

lack of fuel. Many crash landed or landed on allied airfields due to this deception.

Manning mock targets laid out in fields must have been a lonely and nerve wracking occupation. These mock factories and railway yards and towns were composed of lights and pyrotechnic devices controlled by an operator in a bunker close by. They were designed and set up under direction from movie effects specialists to look like targets under bombing attack. They mimicked the real targets close by and attracted bomber crews to bomb them in preference to the real thing thus diverting bombs from the real targets.

The bombing beam systems have been well covered in previous books. This book tells the stories of those who flew the investigation flights under primitive and dangerous conditions and manned the countermeasures. The experiences of those who took part, often not knowing the purpose of what they were doing or how it fitted into the overall operation, are of great interest.

The book gives an interesting overview of the technical battle and those who took part. Many of those recruited for this were radio amateurs and many went on to be leaders in the post war expansion of radio and electronics.

The book was obtained direct from the publisher in the United Kingdom after reading a review by Pat Hawker G3VA in *RadCom*, August 1997. As it was a specialist publication, a copy was obtained direct from the UK. The phone number of the publisher was obtained and the book ordered using a Visa card to pay for it. The service from the publisher was excellent and the phone call was relatively cheap.

The book cost just over 17 pounds sterling with surface post and packing. Delivery time was around eight weeks. Paying by Visa minimised the costs of currency conversion and the phone order was fast and cost less than \$2.00 for the call. You could speed up the process by using air mail delivery at extra cost. Remember the phone number given is a UK phone number and you must drop the leading 0 and precede the number with the country and international access codes.

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There have been many books about the Second World War and its many technological facets. The development of many techniques, which we now take for granted, was accelerated, but there was often a struggle by the "boffins" to achieve these techniques and counters to them.

There have been two excellent books in the last 20 years. *The Secret War* by Brian Johnson and *Most Secret War* by R

■ Book Review

W6SAI HF Antenna Handbook

Publisher: CQ Communications Inc
Author: William I Orr, W6SAI
Reviewed by: Evan Jarman VK3ANI
ISBN: 0-943016-15-0
Paperback 275 by 217 mm, 164 pages

Bill Orr has been running a technical topics column in *CQ Magazine* for many years now. This book is a compilation of the antenna related articles that have appeared in that column. A few articles from other magazines, like *Amateur Radio*, have also been included.

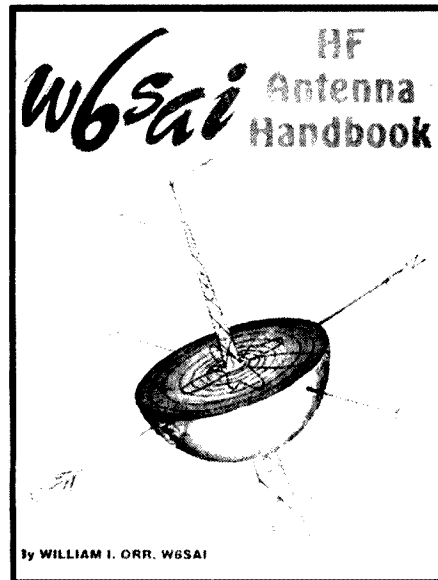
The book concentrates on HF designs. It is a recipe book of mainly standard antennas and shows how many of the contributors have adapted the designs. Also included are those designs that have come into being through necessity, the mother of invention. The majority of the book is practical. A reader should be able to duplicate most of the designs. A little theory is included, but mainly as a guide

to the sort of response to be expected.

Included is a description of those extra things needed in antenna construction. Things like safety equipment and construction methods. These are the bits that theory never tells you, but are still very important.

Also included are the peripheral parts of an antenna system. There are a few chapters on transmission line and impedance matching equipment. The articles on Z matches by the two Rons, VK3OM and VK3AFW, and Lloyd Butler VK5BR figure prominently.

Some errors were spotted in the dimension tables for the sides of cubical quads in two places. They involved repeating 20 m dimensions as 10 m



dimensions, so are probably typographical and are easy to work out.

There is much variety in the designs which makes the book a good source of ideas. Some designs did require some lateral thinking in their evaluation. The majority of the designs are conventional wisdom with some tweaking.

The book is obtainable from Daycom Communications (stock number BR95) for \$35.

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■ Book Review

More Out Of Thin Air

Publisher: PW Publishing Ltd
Reviewed by: Gil Sones VK3AUI
ISBN: 1-874110-05-0

More Out of Thin Air is an improved and updated version of the original *Out of Thin Air* book published in the early 1980s. It draws on the considerable number of very interesting articles published in *Popular Wireless* over many years.

Some items by the late Fred Judd G2BCX, of "Slim Jim" fame, and the late Charles Molloy G8BUS, are included as they are of considerable interest. There are, however, many new articles of interest which have been included.

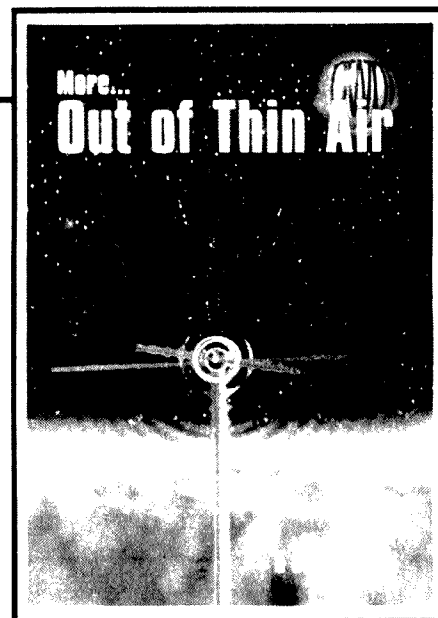
The book covers practical antenna designs for all bands from HF through

UHF. There are also many practical tips for the keen antenna experimenter. They provide a different view from the many books originating in the USA.

There are also some reviews of antenna systems and test equipment. These are all of current items and are of some interest.

The book contains much of interest to the keen antenna experimenter and complements the many other books from the USA. The book is obtainable from Daycom Communications (stock number BR600) at the very reasonable price of \$20.

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■ Transmitters

Further Thoughts on the Garran

Peter Parker VK1PK
7/1 Garran Place
Garran ACT 2605
parkerp@pcug.org.au

Introduction

Since its completion about three years ago, a number of improvements have been made to the *Garran* 40 metre CW transmitter (Ref 1). The most notable of these has been the addition of a receiver section (Ref 2). Further modifications have made the rig more pleasant to use. This article brings the reader up to date with these latest changes, some of which may be applied to other QRP projects.

Extended VXO Tuning Range

A major limitation of the original *Garran* was the restricted VXO tuning range (4-5 kHz typical). Experimentation with different series inductances was rewarded by an increase in frequency shift to 9 kHz. The modified transceiver now covers 7.011 – 7.020 MHz.

The modification is simple. All that is needed is to use a different inductance in

series with the crystal. The toroid used in the prototype is removed and a new inductance is substituted. This consists of 14.5 turns of enamelled copper wire (from an old transformer) wound on a two hole TV balun former (Fig 1). These formers come in two sizes. This circuit uses the smaller type (about 6 x 7 x 13 mm – DSE Catalogue No R5445).

Because of differences between individual crystals, a certain amount of experimentation is required in the winding of this coil. Start with (say) 10 turns and listen to the VXO's output on a receiver. Note the tuning range, and the ability of the oscillator to restart (at any frequency setting) when the power is removed and then reapplied. If the oscillator is unreliable in starting, remove a half turn at a time and test until its operation becomes reliable.

If the oscillator was reliable, try adding more turns (half or one at a time) and see how far you can pull the tuning range down without sacrificing coverage at the top end of the band and/or compromising oscillator stability. A range of 9 kilohertz was obtained in the *Garran*, though similar VXOs on 7 MHz have yielded shifts in excess of 15 kHz.

Care should be taken when positioning these balun formers – proximity to metal objects affects their operation. When the new VXO inductance was first added to the *Garran*, it was found that operation became erratic and RF power output varied wildly across the VXO's tuning range when the top lid was screwed into place. Without the lid, operation was perfect.

Experiments with a small piece of metal being moved around the VXO area

of the rig (to simulate the effect caused by the lid) found that the problem only occurred when metal was near the balun former. Moving the balun former further from the lid (by shortening the connecting leads), and turning it 90 degrees so the plane of the loop formed by the turns was parallel to the horizontal circuit board, completely cured the problem.

Increased Power Output

More power is possible if the 2N3053 PA transistor is replaced with a 'stronger' device. In the prototype, the use of a VHF transistor (believed to be similar to a 2N3553) boosted the output power to two watts. It is likely that any further power increase would require the addition of a new power amplifier stage.

Transmit/Receive Switching

The switch labelled Rx/Tx in Fig 1 of Ref 2 is unnecessary, as all switching is

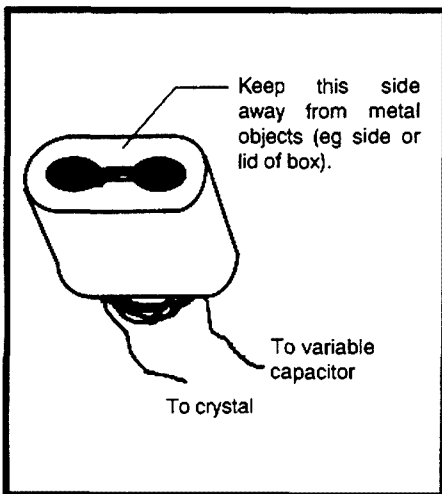


Fig 1 – TV balun core inductance used in modified VXO.

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handled by the 2N2905 PNP switching transistor. The switch can simply be removed and the connections bridged.

Preventing Broadcast Station Breakthrough

No receiver overload from strong 7 MHz AM broadcast signals was noted during the day. However, in some areas, twilight and evening operation may be hampered by such overload. If this is a problem for you, wire a low value resistor across the receiver antenna input (from the relay side of the 47 pF capacitor to earth). In the prototype, a 47 ohm resistor cured the overload with a negligible effect on receiver sensitivity.

Receiver Overload from Strong In-band Signals

Ref 2 mentioned that a stronger product detector may be required for serious QRP DX work. This comment was based on the *Garran's* performance in the presence of local (1 km distant) amateur CW signals 10-15 kilohertz from the frequency to which the transceiver was tuned.

Experiments with a direct conversion transceiver similar to the *Garran*, but equipped with a better audio filter, revealed that the overload disappeared when the filter was switched in. This seems to indicate that the overload was occurring in the audio amplifier stages rather than the receiver's NE602 product detector.

Those wishing to use the *Garran* in the presence of strong local signals should therefore add a narrow audio filter (consisting of at least two op-amps) to make the transceiver more selective and reduce the risk of the audio amplifier being overloaded. Once this has been done, the receiver (with NE602 detector) should perform well in all but the most hostile RF environments.

References

1. *Amateur Radio Magazine*, January 1996, page 10 (see also February 1996, page 55)
2. *Amateur Radio Magazine*, September 1997, page 8

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Operating Award Chasing Not for the Fainthearted!

John Saunders VK2DEJ
PO Box 299
Ryde NSW 2112

I am sitting in my shack doing some heavy thinking. It is October 1992. Ryde is celebrating its bi-centenary and the fact that it has been promoted to being a city. What with all the merriment and carrying on, I am using a special event call sign of VI2RC, and am thinking that, if all is well I might just get to a DXCC with this call.

I throw out another "CQDX" call and, to my delight, back comes JT1BV who is wondering what gives with the VI call. I tell him how we are a whole 200 years old, but he is not impressed; apparently the Mongolians have been around a bit longer than that!

He then tells me that the Mongolian club has a series of awards concerning the Khan family, well known travellers in their time.

He sends me the award details and I discover that I can claim their top award, named HUBILAI'S CHRONICLE after the chap who was the head man for some 10 years, having lived 80 years which, in

those days, was quite some achievement.

So, I make out an award application and dig ten green stamps out from under the floorboards and proceed to my local post office.

There is much excitement when I tell them that I wish to send a registered letter to Mongolia. It seems that there is not much call to send mail in that direction. The last I see of the letter it has sealing wax and many coloured lines all over it. I note that it is early in 1993, so I figure it will be a while before a yak staggers through a snow-filled pass carrying it into Ulaanbaatar.

I wait some months until June when I receive a letter letting me know that I have the award, serial number one, and that it will be posted in the first season of the year. This is a great surprise as it is already June. So, when do they have their first season? As there is no Mongolian embassy or local restaurant where I can find out about these seasons, I calculate that I will wait until the end of the year so

that all the seasons must have come and gone.

Early on in the new year I write and ask when will the award arrive. Nothing happens, so I write again, but still nothing happens.

Now, it so happens that in sending letters to some places there are certain citizens who will "nick off" with the stamps or rip the letter open in order to borrow any green stamps or IRCs. I usually ask the post office to provide a label which states that the postage has been paid. At times you enclose a single unfolded piece of paper and then cut the corners on the envelope so that certain curious people can sticky-beak inside to see that no valuables are inside. I even try another registered letter, but to no avail.

This is all very distressing and I start to think that I am doomed to never see this glorious award.

Two years later and I am telling my sad tale to Bill VK4UA. He says that he knows a Mongolian amateur who always answers his mail. So, I get the box number and dash off a letter explaining the situation and asking if he can help.

As I do not know this fellow I figure a couple of green stamps will not go astray. But they do! My letter turns up at home a few days later in an Australia Post envelope saying that my letter was found on the mailroom floor here in Sydney. Naturally, the envelope and green stamps

ULAN-BATOR MONGOLIA

JT1BV

P. O. BOX 106,
ULAANBAATAR- 51,
MONGOLIA, ASIA

CQ ZONE
23

ITU ZONE
32

DATE	GMT	TO RADIO	RST	MHZ	MODE	QSL
Oct 23 1992	11:29	VI2RC	57	14.891	2x CW 2x BSB	TK5 PSE

NARANBAATAR T.
P.O. BOX 633,
ULAN-BATOR

73! *Narjff* *NARAN*

in a local bar when in walks Steven Pall VK2PS. "What's with all the sobbin' and cryin'?" he asks.

Sadly, I tell him the whole tale which, I am pleased to see, brings a tear to his eyes.

"Well", say Steve, "it so happens I know a journalist who is a ham who is going to Mongolia next week. Why don't you write it all out and he will ask the Mongolian wheels just what gives".

This is such a good idea that I do it forthwith and send it off for Steve to fire up his friend.

Months later I get a phone call and a voice asks if I'd like to call around and pick up my Mongolian award. I get there at the speed of sound!!

So now it hangs on my wall secured by the biggest nails I could find. And, to round off the whole story, I managed to get the ARRL awards for DXCC and WAS with my VI2RC call.

Let this be a warning that award chasing is not for the fainthearted!

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The Mongolian QSL card.

are missing. Obviously this sort of thing does not just happen in third world countries, but also happens right here!

Being a slow learner I try again and two weeks later my empty envelope is returned to me by a Mongolian who says he found the envelope in his postal box.

I figure this is a good sign. I'm getting

closer. I try a registered letter and it is never heard of again. I go back to cutting off the corners but this, too, vanishes.

Then I get a great idea. I send a postcard with a label but it, too, disappears into that great post box in the sky!

At this time I am crying into my beer



The Mongolian HUBILAI'S CHRONICLE certificate 001 awarded to John VK2DEJ.

QSLs from the WIA Collection

Ken Matchett VK3TL
 Honorary Curator WIA QSL Collection
 4 Sunrise Hill Road, Montrose VIC 3765
 Tel (03) 9728 5350

children with cancer was held in Tweed Heads in April 1994. Over a dozen operators took part by roster each day, and for the children it was truly a worthwhile experience with amateur radio.

Several members of the Gold Coast ARS and other radio amateurs were involved with the project including Roy VK4LPV, Ralph VK4VQ, Don VK2CYI (now VK4BY), Frank VK4EH and Mary VK2BEM to name just a few.

Camp Quality is a non-governmental organisation which was started by an Englishwoman, Vera Entwistle, in Sydney in 1983. The organisation, whose aim is to give support to children with cancer, now has offices in no fewer than 19 countries throughout the world.

NN50CIA

This QSL, NN fifty CIA, commemorates the fifty years of the American Central Intelligence Agency, which was established

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73 FS TNX for Contact STAN. VK4RIC ADRIAN
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Amateur Radio Station



NN50CIA

República Dominicana

CO8 - IARU2 - ITU11

HI500UD

100 ANIVERSARIO DEL DESCUBRIMIENTO DE AMERICA

1492 - 1992

TO RADIO STATION Y58-02-A (IK8BQE) CFM. QSO

DATE	GMT	BAND	2WAY	RST
25/03/90	05:11	160 80 (40) 20 15 10	SSB/CW	570

QSL VIA HI5UD

73 OX Gracias QSL

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P. O. Box 449-3, Santiago
República Dominicana

Joe
HI3-JMP

shipwrecked off the coast of Portugal when he was only 24.

After the discovery of Cuba, Columbus went on to discover the island of Hispaniola, which today is made up by both Haiti to the west and by the Dominican Republic to the eastern end of the island. The Republic is the oldest settlement of European origin in the New World and was established in 1496 by Bartholomew Columbus, the brother of the great navigator. This QSL, HI five hundred UD, celebrates the fifth centenary of the island's discovery in 1492.

Thanks

The Federal body of the WIA would like to thank the following for their kind donations of QSL cards towards the collection:

Allan VK2PT, Jim VK2ZC (courtesy of Bill VK2XT), Trevor VK4ARB, Alan VK4AAR, Neil VK6NE, Peter VK4VW, Bill VK2WS, Jeff VK6AJ and Alan VK3AUC.

Also the friends and relatives of the following "SKs":

Ross VK5KF and Rex VK5DO (both courtesy of Geoff VK5TY), Norm Mortlock VK2PQ (courtesy of David VK2AIF), Tom Dowling VK4OD, Bill Tallent VK3TT (courtesy of Bill VK3PH), Bern VK3IW (Pre-war - courtesy of Alan VK3AUC), Bruce McCubbin VK3SO, Rex Shilton VK4CAG and Joe Ellis VK4AGL (both courtesy of Geoff VK4GAP and the Sunshine Coast ARC).

ar

in September 1947. Since radio communications play a vital role in the collection and dissemination of intelligence information, it is not surprising that several CIA employees are active amateur radio operators.

This commemorative QSL introduces a new prefix, NN fifty, although several prefixes using high numerals have been used before, such as NQ two hundred commemorating the 200th anniversary of the constitution of the USA and W84, W23 celebrating the twenty third Olympiad held

in California in 1984. The 10th Pan American Games, held in Indianapolis in 1987, was also celebrated using the callsign W87PAX.

HI500UD

The discovery of the "New World" by Christopher Columbus ranks as possibly the most significant event of that century, so much did it foster trade and lead to extensive colonisation. Columbus was born in 1446 in Genoa, Italy and began a life at sea at an early age. We know little about his early voyages except that he voyaged to Iceland and was

Svalbard Again

(News from Gwen Tilson VK3DYL)

31st December 1997 was the last date to register for the Polar YL meet in August and so far there are 55 participants (36 YLs) from 11 countries: Norway, Switzerland, Germany, Australia, Japan, Luxembourg, France, Italy, Canada, Sweden and Finland, with some expected from USA and England and, hopefully, Monaco, with a total of about 100 people attending.

Gwen feels that the hotel in Svalbard, like that in Toronto, will never be the same again. She has her fingers crossed they can all speak at least a little English, but is armed with a Norwegian dictionary/phrase book and can already say "tusen takk" meaning "a thousand thanks".

TF YL Activity - Iceland, Land of Ice and Fire

(News from Ruth IT9ESZ)

It was a very short time between the idea to go to Iceland for a radio-vacation with Ruth LA6ZH (Oslo) to its realisation. Oslo-Ruth, my good friend for many years, was a great

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help for this undertaking. Her married son Jens lived in Reykjavik so we could count on him for help. Also she personally knows the well-known local OM, Vilhy TF3DX, who was most helpful. He did a wonderful job putting up a suitable antenna, a long wire in the backyard of Jen and Dora's house, with the permission of various neighbours.

We chose mid-June to spend our work-

holiday in the beautiful and fascinating capital. In Jen's house we had comfortable accommodation and one of our bedrooms in the basement was also the shack. We agreed beforehand about time-sharing the only transceiver and Oslo-Ruth's fixed times for her satellite-transmissions (which she'd learnt only a month earlier.)

She travelled on a direct flight from Oslo to Keflavik and carried the IC-751A, the new antenna tuner MFJ Deluxe Versa II, the CW key and the microphone with her. I travelled light, from Palermo via Zurich and Copenhagen to Iceland with only my headphones! We didn't take along an amplifier since in Iceland one can only have 200 W output.

Oslo-Ruth was in charge of CW and I transmitted on SSB. The bands and frequencies were made known via DX clusters, e-mail and personal letters, so the pile-ups were assured!

Who knows about the pounding-heart feeling at the first QSO in a DX location? Well, my first contact from TF was with Christa DJITE who had been waiting

patiently for hours, along with lots of other DL-YLs. Hearing a familiar voice was a "just perfect" opening to my six days activity.

I had good signals into Europe with only 100 W. Conditions were reasonable. We knew about the unlucky position of Reykjavik with the aurora-belt right over the region with about 243 aurora-days a year (1-5 days a year in Europe) and frequent black-outs, too. Further north in Greenland would be better.

The first days passed very fast. Oslo-Ruth usually got up very early for her transmissions and I stayed on the bands until late after midnight. The 20 m band was the best. On 15 m I had only five QSOs, four with DL YLs, but the 40 m band was often open in the evening. Then nice OM friends informed me of the opening and prepared the way for my QSY to 7 MHz. I'm very grateful to many OMs who helped me to run the pile-ups in an orderly manner and with calm, also reporting the QRP stations which I couldn't hear in the crowd. A hearty "Grazie" to all.

Ruth and I usually went for a walk downtown once a day, and in the evening we sometimes went out for supper to taste the great variety of fish and lamb (Iceland has 250,000 inhabitants and 600,000 sheep!). We were without our husbands during our radio-activity; both of them are non-hams, and it worked out perfectly.

After only four days, Oslo-Ruth had a heart-attack and had to be rushed to the nearby hospital; she stayed there for over two weeks. Luckily she feels much better now and carries on her numerous duties as before. She was very unhappy about all the skeds she missed with her friends, especially the satellite ones, but I'm sure they understood.

I also had a very pleasant visit with two local YLs, who Vilhy introduced to me, Frida TF3FHT and Soffia TF3GKT, who are never on SSB. That is why there is a great demand for TF YL contacts. Maybe they'll give it a try one day.

The rest of my days without Oslo-Ruth were passed mainly in the shack with sandwiches and coffee, so I was quite happy upon the arrival of my husband, Vincent. Then the "holiday" part of the trip to Iceland started and together we visited as much as possible of this enchanting and unusual island with different landscapes from moonlike craters to never-ending glaciers, and the geysers which are very famous and spectacular. The almost 24 hours daylight with only two hours of twilight was, of course, very unusual for us but one gets used to it without sleeping problems.

We do hope all those who had a contact with us from TF-land were as happy and pleased as both of us - the two Ruths! A heartfelt thanks to Vilhy TF3DX, to Jens and Dora and family, and to Oslo-Ruth's

husband Tor who designed and prepared our home-made QSL cards.

Welcome New Member

Diane K2DO Sponsored by Marilyn VK3DMS.

Changed Callsign

Patsy KA7MZZ is now W7PAT, and OM John is now W7SIR.

17th ALARA Contest Results

(From Marilyn VK3DMS, Contest Manager)

Aimee FK8FA	473	- Top score overall, Top score DX YL, Top Pacific Islands, Top Pacific Islands ALARA Member.
Bev VK4NBC	348	- Top score VK YL, Top score VK Novice, Top score VK Novice CW (Florence McKenzie Trophy-152 points), Top VK4 ALARA Member.
Gwen VK3DYL	282	- Top VK3 ALARA Member
Judy VK3AGC	161	
Alex ZL1BVK	138	- Top ZL OM
Frank VK2EKY	135	- Top VK OM
Mavis VK3KS	120	
Dot VK2DDB	114	- Top VK2 ALARA Member
Pat VK4PT	110	
Celia ZL1ALK	103	- Top ZL ALARA Member
Bev VK6DE	97	- Top VK6 ALARA Member
Ivor VK3XB	95	
Bev ZL1OS	93	
Christine VK5CTY	90	- Top VK5 ALARA Member
Marilyn VK3DMS	75	Check Log
Poppy VK6YF	71	
Alan VK8AV	70	
Bron VK3DYF	65	
Ted VK4EWR	60	
Brian VK3WYN	50	
Margaret VK4AOE	33	
Maria VK5BMT	31	Check Log
Sue ZL3AHT	28	Check Log
Dawn ZL2AGX	26	Check Log
John VK5KMI	25	
VK5GGA	20	- Top Club station (Girl Guides of SA)
Len VK3ALD	15	

Summary:

VK ALARA Members	13
DX ALARA Members	5
VK OMs	7
DX OMs	1
Club stations	1
Total logs	27
Check logs	4

Again we battled our Contest amid pretty poor conditions; just maybe some day it will all become better! I must congratulate all those who took part. Despite the small scores, everyone seems to have enjoyed the day.

Special mention must be made of Aimee FK8FA, who obviously had better propagation than the rest of us here in VK. That was her good fortune, and she deserves her great win this year. However, last year's winner, Bev VK4NBC, also had a very good score, and won the Florence McKenzie Trophy for the third time. Great work Bev.

Last year's OM winner, Alan VK8AV, unfortunately had problems with thunderstorms (among other things) which shut him down. Those events are not to be argued with! I guess the solar flare was the real culprit over that weekend, also spoiling

the fun for the Girl Guides in Adelaide, who again took part. It was great to hear more OMs taking part this time, with special mention of Alex ZL1BVK and Frank VK2EKY, who both achieved good scores.

From Gwen VK3DYL comes a light hearted story. A local OM promised to work the YLs in the Contest, but found himself in a new house with no antennas come Contest Day. Undaunted, he loaded up his Hills rotary clothes hoist and gave out points on various bands! I just wish there was a special award for his originality!

It is always great to catch up with other ALARA members, especially Mavis VK3KS who always works under considerable difficulty. Thanks for the effort, Mavis. See you all again on 7 November for our 18th Contest. **ar**

No, this column isn't late; it was decided to move it to a different bi-monthly schedule. I still do not have any input from the other WICEN Divisions, so once again this will be a NSW-oriented article (hint).

The Christmas and New Year "silly season", known for bush fires, storms, and the occasional earthquake, etc is now over, with few if any WICEN activations. In the meantime, let us spare a thought for those bush fire fighters who died in the line of duty; as volunteers they were not exactly getting paid to risk their lives...

We in NSW are always looking for ways to publicise ourselves, and a stand at the Homsby and District Amateur Radio Club's "Open Night" attracted attention from members of the public and some would-be amateurs. Particularly eye-catching were the photographic displays designed by Ron VK2UR. Thanks must also go to Tony VK2TJF for the information sheets produced at short notice. By the time you read this, the annual Central Coast Amateur Radio Club's Field Day will be over, and WICEN always picks up new members here.

Preparations are well under way for a State Wide Exercise in NSW, to be held just before the opening of the John Moyle Memorial Field Day. The idea is to involve all members

WICEN News

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by giving them a message to pass (somehow) to the Dural command post VK2WIC (which also happens to be the VK2 Divisional broadcast station VK2W1). Afterwards, personnel are encouraged to remain in the field, to partake in the Field Day; perhaps other states could follow suit?

The following appeared in a recent issue of the NSW newsletter, in my President's Column, and is worthy of reproduction here, slightly edited:

"WICEN's future is inextricably linked with the WIA, and we must support each other if amateur radio is to become other than a passing curiosity in the next century. The advent of cellular phones has seen some opportunities taken away from us, and has also removed the "mystique" of world-wide communications. The Internet has also stolen a generation of children away from radio, and it is up to us to show them that we can do for free what they have to pay for. As communicators, we seem to be pretty poor at it..."

"There will always be a role for WICEN, since no other service can afford to keep a team of technically-qualified communications people standing by, "just in case". No other service can deploy the range of modes in the field, at short notice, and quickly reconfigure them as circumstances dictate, as we can.

"Australia appears to be unique in relying heavily upon volunteer labour, such as the VRA, the SES and the various bush fire brigades; this concept seems to be unknown elsewhere, and it is to our advantage to promote this wherever possible; all we ask for in return is the use of our bands, and it is the

WIA's role (as the only game in town, despite what you may hear from a few) to ensure this...

"Speaking of the bands, I'm going to suggest some heresy, and state that WICEN should not confine itself to the amateur bands; we must be able to show the authorities who rely upon us (perhaps unknowingly) that we are just as comfortable driving a telephone, or a GRN radio, as an amateur transceiver. To insist that we shall do nothing more than the latter will surely consign us, and amateur radio itself, to oblivion.

"The keyword here is "flexibility", and we must be prepared to use whatever means are available to pass that message (which is, after all, our function); if we can employ the amateur bands, then so much the better. For example, it is not well known that WICEN's role in the Thredbo disaster was to run the DVR (Disaster Victim Registration) system in the Sydney Police Centre, and to train police personnel in the use of the system; it's things like this that gain us heaps of "Brownie points" amongst the relevant authorities.

"I have it on good authority that should we be called out to perform a particular function, and we refuse ("but it ain't amateur radio!") we can forget about taking part in more "attractive" events; sometimes, we just have to roll up our sleeves and show that we are prepared to do "grunt" work.

"Support the WIA any way you can (we need each other in order for amateur radio to survive) and be prepared to consider communication means other than your own radio."

Gleefully, I await the brickbats to be thrown at me for expressing the heresies above...

Please send contributions for this column to dave@geac.com.au, or alternatively via packet radio to VK2KFU@VK2KFU.NSW.AUS.OC, or snail-mail to PO Box 257, Wahroonga, NSW 2076.

If further information about WICEN (NSW) is required, please contact the acting State Co-ordinator, Alan Whitmore VK2YYJ, on 015-097-217; contact details for other Divisions are requested.

ar



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I am remiss in that I did not thank the various members, including one DX member, who sent Xmas and New Year greeting cards. I also was chastised for not publishing the RTTY DXCC listing. So here it is:

- VK3EBP 210/212
- VK2BQS 121/123
- VK3AMK 100/102
- VK5RY 100/102

These figures were published under CW in the February listings. Just proves that you can't get away with anything.

The Tassie Trout Award

The Central Highlands Amateur Radio Club of Tasmania was formed in 1988. After consultation with the appropriate authorities, VK7KZ and VK7NDO formed this Club, wrote a constitution, and applied for a callsign. The club rules are simple:-

1. The President is always right.
2. If in any doubt, refer to rule 1.
3. Members will fine each other for breaches of rules.
4. You shall NOT use "Q" code on phone.
5. Anything else considered, in the opinion of the President, to be out of order is a fineable offence.

It was suggested that the club run an award, so the "Tassie Trout Award" was launched. This was for "catching" (or working) 14 kg of Trout (members). This was accepted well and soon the Golden Sticker upgrade for working 25 members was launched. The Platinum sticker upgrade for working 50 members followed soon after.

The basic Tassie Trout Award requires you to acquire 14 kg of trout. The President is worth 3 kg, vice-presidents 2 kg, and members 1 kg. Any members that are portable in the Central Highlands while being worked for the basic award are worth 2 kg.

Overseas stations need only work 4 kg to achieve the award. Fees are \$AUS 5.00 for VK stations, and \$US5.00 for all others. Members gather for a chat every Thursday evening at about 1930 local time, on or near the frequency of 3.585 MHz, and are then available for award contacts until 2000 hrs, when the weekly quiz begins.

Current Office Bearers are President, Bob VK7KZ; Vice Presidents, Bob VK7NBF and Rosanne VK7NAW; Secretary/Treasurer, David VK7NDO; Awards Manager, John VK7JK; and Publicity Officer, Claureen VK3LCM.

Funds for the maintenance of club licence fees are raised by "fines" for using "Q" code on phone or any other misdemeanour thought relevant by other members, as well as the occasional auction held at club gatherings. Fines are notified on air during the annual

AWARDS

John Kelleher VK3DP
 - Federal Awards Manager
 4 Brook Crescent, Box Hill South, VIC 3128
 Phone (03) 9889 8393

general meeting. Payment of such fines is by the "honour system" to the Treasurer.

There are currently 103 members on the register from various States, and new members are most welcome. To join, speak to the controller when you tune in next Thursday (Note to the Publicity Officer - keep me advised annually to achieve regular publication of this Award).

The New Budapest Award

This Award is issued by the Radioamateur Society of Budapest, MRASZ BSZ. It can be obtained by all licensed radio amateurs and SWLs. The Award Manager is Csaba Gal HG5COK, 1368 Budapest POB 383.

To acquire the New Budapest Award, it is necessary to work and confirm different HA5 or HG5 stations as follows:

- HF** HA stations and SWLs, 75 different HA5 stations.
- EU** stations and SWLs, 50 different HA5 stations.
- DX** stations and SWLs, 25 different HA5 stations.
- Satellite** Three different HA/HG5 stations.

The same station may be represented only once in your application. Any amateur bands and modes can be used. All contacts are valid from 1 January 1990. The application must be certified by two licensed amateurs, and must be sent with a fee of 10 IRCs to the Award Manager.

Information on the following three awards was sent to me by Zbig VK2EKY.

Maritime Mobile Award

This award is available to all amateurs and SWLs. The rules are easy. Send an application which includes at least seven contacts with/MM stations anywhere in the

world. Fees are \$US7.00 or 10 IRCs, and should be included with your GCR list to: Piotr Brydak SP5PB, Okolnik 9A m16 00-368 Warszawa Poland.

All Baltic Islands Award

This attractive award is available to any licensed amateur or SWL. Europeans are required to work 20 Baltic Islands, while operators from North America, Africa and Asia require 10. South America and Oceania require five Baltic Islands.

GCR list of all contacts made is required with names if possible. The fees and the Award Manager are identical to the previous award.

Warszawa 2000 Award (700 years of the City of Warszawa)


This award is issued to commemorate the 700th anniversary of the City of Warsaw. To achieve this award, 700 points must be collected under the following rules:

- Each station from Warsaw, 300 points.
- Each station from SP5 District WA, 200 points.

If you find this difficult to achieve, gain points by participating in the annual SPDIX contest which takes place on the first weekend of April. Contacts are valid only between 1 January 1997 and 31 December 2003.

The fees payable and the Award Manager are identical to the two previous listed awards.

Tassie Trout Award



The Central Highlands Amateur Radio Club of Tasmania has much pleasure in awarding this certificate to in recognition of an excellent catch of the elusive Tassie Trout with a total weight of kg.

Award Manager
 Treasurer
 Date
 Award No.
 Section
 Section

YAESU VX-1R MICRO DUALBAND HANDHELD TRANSCEIVER

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The new VX-1R is one of the world's smallest dualband amateur rigs, sporting a 2m/70cm transceiver with wideband receiver in a case sized just 81 x 47 x 25mm WHD. It has impressive memory and scanning facilities as well as receive coverage of VHF and UHF TV, AM and FM broadcast band, AM aircraft band and other public service frequencies from 76 to 999 MHz*.

Leading-edge technology from the VX-1R's 500mW MOSFET power amplifiers together with the supplied 3.6V 700mA/H high-capacity Lithium Ion battery will provide many hours of superb local communications. Up to 1W output is available for longer range when external DC power is used. Extensive battery-saving features together with the Li-Ion battery's 2-hour recharge system yields long operating times under real-world conditions.

The VX-1R's extensive memory system provides 291 memory channels, most with Alpha-numeric labelling for easy recognition. A Smart Search (tm) system allows you to search a portion of a band you define, then loads any active frequencies into 31 special Smart Search (tm) memories for later inspection (great for finding activity when visiting a new area).

Besides being a fully-featured dual-band amateur transceiver, the VX-1R has extraordinarily wide receiver frequency coverage: you'll also be pleasantly surprised by the great audio on the FM broadcast band. A dual-watch facility is provided - and together with the AM, FM-narrow and FM-wide reception modes - you'll be having fun even when you're not operating on the amateur bands. For selective calling and listening, the VX-1R also includes a CTCSS encoder/decoder and a 104-code Digital Code Squelch (DCS) system as well as a Tone Search facility for both CTCSS and DCS encoded transmissions.

A great range of accessory lines for the VX-1R are available such as speaker/mics, a carry case, as well as a battery holder for 1 x AA alkaline battery which includes an inbuilt voltage step-up converter. Computer programming of the VX-1R is available via the optional ADMS-1D programming kit.

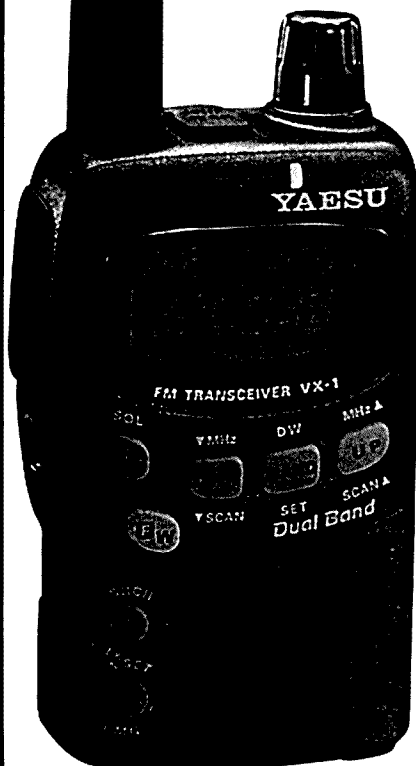
So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

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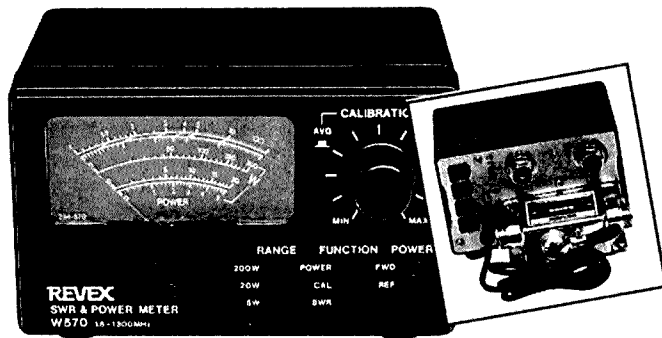
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D 1377

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D 4808

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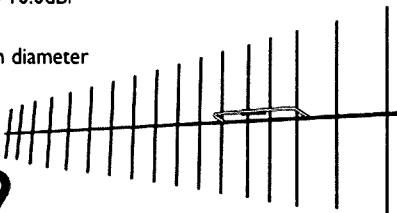
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 Suitable mast: 28-60mm diameter
 Max wind speed: 40m/sec
 Connector: SO-239

D 4828

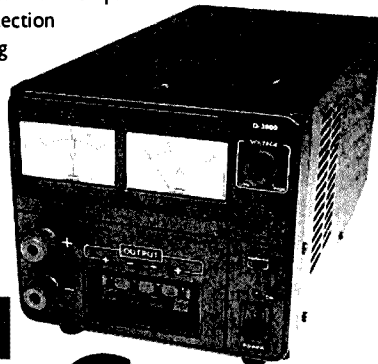
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Contests

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Federal Contests Co-ordinator
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Contest Calendar March - May 98

Mar 7/8	ARRL DX SSB Contest	(Jan 98)
Mar 8	DARC 10 m Digital Contest	(Feb 98)
Mar 14/15	Commonwealth Contest (CW)	(Feb 98)
Mar 21/22	WIA John Moyle Field Day	(Feb 98)
Mar 21/22	Russian DX Contest	(Feb 98)
Mar 21/22	DARC HF SSTV Contest	(Feb 98)
Mar 21/22	Bermuda Contest	(Feb 98)
Mar 28/29	CQ WPX SSB Contest	(Feb 98)
Apr 4/5	SPDX Contest	
Apr 10/12	JA DX High Band CW	
Apr 11/12	EA DX Contest	
Apr 18/19	Holyland DX Contest	
Apr 25/26	Helvetia DX Contest (Switzerland)	
Apr 25/26	SPRTTY Contest	
May 2/3	ARI DX Contest (CW/SSB/RTTY)	
May 9/10	Sangster Shield Contest	
May 9/10	CQ-M DX Contest	
May 30/31	CQ WPX CW Contest	(Feb 98)

Power Line Noise

As amateurs, we are used to pushing the boundaries of what's possible. It's always a thrill to hear a station coming through on a path which defies the propagation charts, and even better when one is able to work it. In this respect we do remarkably well, given the limits on power and antenna size which we face.

Many years ago, I used to regularly get up early to operate on 40 m, seeing how late I could work DX as the sun continued to rise. Now as most people know, 40 can be very good for an hour or two around sunrise, but at a certain point the attenuation climbs steeply, and within a few minutes it's all but over. One can hear the band closing, as the fading patterns change and the noise takes on its characteristic daytime sound.

In those far away days, my parents' house was in a fairly quiet suburban area and I could often hear DX quite late, until the power line noise set in. Saturday and Sunday mornings would usually see me in the shack, tuning around and calling all manner of stations, ever the optimist (the fact that very few of them ever came back never seemed to faze me).

I discovered that the power line noise, which usually commenced abruptly, seemed to come from the pole outside our house. I found this out one day when my listening was cut short by a loud hash, and I rushed out and banged the power pole. Back in the shack the band was quiet again.

This developed into a routine. Whenever the power line noise started, I would rush out and bang the pole with something heavy, which usually bought me an extra five or ten minutes of listening time. Other times I would grab the hose from the front garden, and hose the insulators. The neighbours must have thought me mad! They were probably right.

For something different, sometimes I

would grab the ladder and walk hastily across the roof, trying not to fall through the slates until I got to the front of the house, so I could give the telephone wire a good tug to shake the pole. Over the weeks, that poor wire developed a terrible sag!

I rarely missed a weekend without performing at least one power pole routine. However, I'll never forget the Sunday when, as I was listening to a South American coming through on a rare long path opening, the noise started, completely drowning out the station. This time I decided it was time to put the power pole out of its misery for once and for all, and grabbed the axe. I wasn't going to chop the pole down mind you, just give it such a good shake that the dirt would fall off the insulators and it would be quiet for the next six months.

So there I was, standing in the street at 8.45 on a Sunday morning, viciously whacking the pole with the back of the axe. "Take that" and "there's another one", etc. Whack! Whack! Whack!

Glancing down the street, I noticed an elderly gentleman in his Sunday best walk around the corner, probably on his way to Church. He got several metres into the street, froze, and then slowly backed out of the street before he turned and ran. "What an idiot" I thought, "people like that shouldn't be allowed out" as I continued my pole whacking. Several days later the penny dropped, and I realised he thought I was the lunatic, no doubt about to chase after him with the axe!

The thought of it gives me a laugh to this day. I never heard the South American again of course, and shortly afterwards conceded defeat to that wretched power pole. One has to know when to give up.

Contest Dates

The RSGB 7 MHz Contest is normally popular with VKs, as it provides a good run up to the Commonwealth Contest in March. Those who listened around on the appointed weekend, which is the third full weekend of February, were no doubt puzzled at the lack of activity. The reason is that after publishing the date in their yearly contest guide last September, for some reason the RSGB changed the date, but didn't publish the revision until January, which is much too late to be disseminated to overseas societies and published in journals like this. Even the Europeans were caught short, as most of their contest calendars which I found on the Web still showed the old date.

My apologies to those who wondered what happened, and I hope you caught up with the contest the following weekend. My thanks to the sharp eyes of Alan VK8AV for drawing this anomaly to my attention.

End of an Era

And so, to my final bit of news this month. After two terms as Federal Contest Co-ordinator, I've decided it's time to step aside and let someone else take the reins. The task is easy and fulfilling; however, it's time to attend to some other personal projects, which have been on hold for much too long. Consequently, my last column will be for the May issue, which means a replacement person needs to be found soon. Would YOU like to be the next FCC? Expressions of interest are invited.

For information and assistance this month, thanks to VK2BQS, VK8AV, 4Z4KX, G2HLU, G3PJT, G4BUO, HB9DDZ, LA9HW, PA3ELD, SM3OJR, VE2ZP, and PZK. Until next month, good contesting!

73, Peter VK3APN

SP DX Contest (CW and SSB)

1500z Sat to 1500z Sun, 4-5 April

This contest runs on the first full weekend of April, and usually has a good level of European activity. Categories include single operator (single or all band), multi-operator, and SWL. Bands are 160-10 m, and modes CW or SSB. Send RS(T) plus serial number; SPs will send RS(T) plus a two letter province code. Score three points per QSO with each Polish station and obtain the final score by multiplying by the number of Polish provinces worked (max 49). In this contest, multipliers are counted only once, even if worked on more than one band. Mixed mode contacts are not allowed.

SWLs must receive the callsign and number sent by Polish stations, plus the callsign worked. Each SP may be logged only once per band.

Send your log, summary sheet, and multiplier check list postmarked by 30 April to: SPDX Contest Committee, Box 320, 00-950 Warsaw, Poland. Disk logs are welcome (ARRL/ASCII tile format).

Polish provinces are: SP1: KO SL SZ; SP2: BY GD EL TO WL; SP3: GO KL KN LE PI PO ZG; SP4: BK LO OL SU; SP5: CI OS PL SE WA; SP6: JG LG OP WB WR; SP7: KI LD PT RA SI SK TG; SP8: BP CH KS LU PR RZ ZA; SP9: BB CZ KA KR NS TA.

Japan DX CW Contest (High Band)

2300z Fri to 2300z Sun, 10-12 April

The object of this contest is to contact as many Japanese stations as possible on 14, 21 and 28 MHz CW. Classes include single operator (single and multi-band), high or low power (100 W); multi-operator (1 Tx); and maritime mobile. Maximum operating period for single operator stations is 30 hours (show rest breaks clearly in log), with rest periods at least one hour long; multi-operator stations full 48 hours. Multi-op stations must remain on a band for ten minutes minimum.

Send RST plus CQ zone number; JAs will send RST plus prefecture number (01 - 50). Score one point per JA QSO on 20 and 15 m, two points on 80 and 10 m, and four points on 160 m. The multiplier equals JA prefectures + Ogasawara Isl (JD1) + Minami-Torishima

Isl (JD1) + Okino-Torishima Isl. Send log postmarked by 31 May to: Five-Nine Magazine, Box 59, Kamata, Tokyo 144, Japan. Logs can also be e-mailed. For further information, send an e-mail to jidx-info@dumpry.nal.go.jp with the following command in the body of the message: #get jidxelog.eng

EA DX Contest (CW and SSB)

1800z Sat to 1800z Sun, 11-12 April

This contest takes place on the second full weekend in April. Use 80-10 m, CW or SSB. Exchange RS(T) + serial No; Spanish stations will add their province code. Score one point per QSO, and multiply by the number of Spanish provinces worked per band (max = 5 x 52). Send your log to: URE Contest and Award Manager, PO Box 220, 28080 Madrid, Spain, to be received by 16 May.

Spanish provinces are: EA1 (AV BU C LE LO LU O OR P PO S SA SG SO VA ZA), EA2 (BI HU NA S STE VIZ), EA3 (B GE/GI L T), EA4 (BA CC CR CU GU M TO), EA5 (A AB CS MU V), EA6 (PM).

Holyland DX Contest (CW and SSB)

1800z Sat to 1800z Sun, 18-19 April

The object of this contest is to work as many Israeli stations as possible, and runs on the third weekend of April each year. Categories are single and multi-operator all band, and SWL. Bands are 1.8 to 30 MHz. Send RS(T) + QSO number; Israeli stations will send RS(T) + area code. The same station may be contacted on both CW and SSB on each band. Claim two points per QSO on 160/80/40, and one point on 20/15/10. The final score equals total points times total areas, areas counted separately for each band. SWLs should report Israeli stations only, and include time, callsign, station worked, RS(T) + area code, and points.

Forward summary sheet and separate logs for each band, postmarked by 29 May 1998 to: Contest Manager, Israel Amateur Radio Club, Box 17600, Tel Aviv, Israel 61176.

Note: Israeli mobile or portable stations can operate from up to five different areas during the contest. The operation from each area gives that station the status of a different station with another call, thus giving additional contest points and multipliers. To identify the changed areas, such stations will modify their callsigns by adding a number after their prefix, eg 4X4JU will use 4X41JU, 4X42JU... 4X45JU; 4X6JS will use 4X61JS, 4X62JS, etc. Areas are the grid square followed by the administrative region (AK AS AZ BL BS HB HD HF HG HS JN JS KT PT RA RH RM SM TA TK YN YZ ZI).

Helvetia DX CW/SSB Contest

1300z Sat to 1300z Sun, 25-26 April

Work only Swiss stations, CW on 160-10 m and SSB on 80-10 m. You may work a station only once per band, regardless of mode. Score three points per QSO; multiplier is the total number of Swiss cantons worked (max 26 per band). Send log to be received by 12 June to: Niklaus Zinsstag HB9DDZ, Salmendorfli 568, CH-4338 Rheimsulz, Switzerland. Cantons are: AG AI AR BE BL BS FR GE GL GR JU LU NE NW OW SG SH SO SZ TG TI UR VD VS ZG ZH.

SPDX RTTY Contest

1200z Sat to 1200z Sun, 25-26 April

Categories are single operator all band, multi-operator all band, and SWL. Use Baudot on 80-10 m, call CQ SP RVG TEST, and exchange RST + serial. Score two points per QSO with own country, five points with other countries in same continent, and ten points with other continents. Multipliers are the sum of DXCC countries and Polish provinces (max 49, see above list). Send logs postmarked by 25 May to: SPDX RTTY Contest Manager, Box 253, 81-963 Gdynia 1, Poland.

Results of 1997 Canada Day Contest

(call/band/QSOs/mult/score)
VKIFF 40 9 5 500

Results of 1997 SOEC Grid Contest (CW)

(call/QSOs/pts/fields/score)
VK8AV 65 193 34 6562

Results of 1997 PACC Contest

(call/QSOs/mult/score)
VK8AV 78 23 1794
VK2APK 44 18 792
VK4XA 39 11 429
VK4ICU 9 6 54
VK4TT 6 4 24

Results of 1997 SAC DX Contest

On CW, the continental plaques were awarded to VK4EET (CW), and VK2APK (SSB). (QSOs/pts/mult/final score):

CW:
VK4EET 134 294 56 16,464
VK2APK 108 240 53 12,720
VK8AV 114 244 50 12,200
VK4TT 9 9 6 54
SSB:
VK2APK 70 106 39 4,134

Results of 1997 Commonwealth Contest

By Harold G2HLU and Bob G3PJT (edited)

Excellent conditions in the northern hemisphere this year, combined with the special anniversary occasion, DXpedition

**Have you
advised the
ACA of your
new address?**

stations and six HQ stations were the ingredients for a record Commonwealth Contest. Many participated for the first time, and 74 stations won a Silver or Gold certificate for working 50 or 60 band-call areas respectively. The total of 164 entries was the highest since 1947!

Careful checking was needed to separate the two leaders, Gavin V2/GM0GAV and John VE3EJ, but in the end Gavin's few received errors secured him the Senior Rosebowl. The top VK spot was just held by

Barry VK2BJ, against stiff opposition from John VK4EMM.

Compared to 1996, total entries were up by 61%, and participation increased slightly to 715 stations with 421 Gs, 137 VEs, 58 VKs, and 29 ZLs. Once again VKs did well, with 45% of participants sending a log.

Although computer logging is on the increase, hand written and typed logs still accounted for almost 50% of entries. Judging by comments, even some of those using computers are still learning the business!

More information on the results, including details of the bonuses worked by each station, is available on the Web page: http://ourworld.compuserve.com/homepage/s/Bob_G3PJT/

The next Commonwealth Contest takes place this month on 14 and 15 March; see last month's *Amateur Radio* for the rules. Please note that Hong Kong is now deleted. Remember that special certificates will be awarded to any station working at least 61 band-call areas.

Results of 1997 Commonwealth Contest

* = certificate

Posn	Call	80	40	20	15	10	Total
Top Ten:							
1	V2/GM0GAV	1086	2231	2834	1895	25	8071
2	VE3EJ	1877	2470	2531	1061	73	8012
3	9G5VJ	650	1468	2529	2150	386	7173
4	VP2EJT	916	2088	2390	1525	155	7074
5	VE2ZP	1222	1726	2308	470	80	5806
6	G4BUO	944	1561	1828	1201	150	5684
7	VK2BJ	771	2179	1685	655	75	5365
8	VK4EMM	511	1936	1976	816	100	5339
9	G0IVZ	848	1518	1799	855	175	5195
10	G3OZF	818	1496	1641	730	125	4810

VK (Open):

7*	VK2BJ	771	2179	1685	655	75	5365
8*	VK4EMM	511	1936	1976	816	100	5339
12*	VK6VZ	463	1881	1233	902	25	4504
34	VK4ICU	490	741	870	450	75	2626
37*	VK3ZC	481	1201	665	75	-	2422
39	VK6AJ	25	630	1065	570	-	2290
68	VK3MR	-	825	618	-	-	1443
69	VK4AAR	-	523	790	125	-	1438
70	VK2DID	255	636	530	-	-	1421
75	VK3CIM	175	521	600	81	-	1377
80	VK4XW	255	357	481	75	25	1193
81	VK3XB	25	536	589	48	-	1178
86*	VK8HA	-	-	981	-	-	981
90*	VK5HO	235	310	345	-	-	876
91	VK4OD	277	139	355	96	-	867
93	VK3KS	-	405	376	73	-	854
103	VK6RU	-	-	180	215	-	395
108	VK3AMD	-	246	-	-	-	246

VK (Restricted):

1*	VK2APK	641	1780	773	198	-	3392
9	VK2BQQ	448	948	620	125	50	2191
15*	VK8AV	150	573	636	536	25	1920
20*	VK4SS	275	658	448	167	23	1571
25	VK4TT	75	795	544	-	-	1414
33*	VK3APN	503	513	73	-	-	1089
42	VK3IY	228	405	-	-	-	633

HQ:

5	VI4WIA (VK4XA)	413	1265	890	412	80	3060
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Results of 1997 ANARTS RTTY Contest

Presented by Jim, VK2BQS

World Plaque Winners:

Single Operator:	UN5PR	5,191,870 pts
Multioperator:	OH3NE	5,138,640 pts
SWL:	ONL383	750,100 pts

Single Operator:

(Callsign/Final Score/QSOs/Mult/Continents/VK Bonus)

= World Plaque; * = Continental Winner

UN5PR #	5,191,870	404	165	6	1300
OH2LU *	4,247,844	445	164	6	900
HA2SX	4,216,196	418	142	6	500
K5DJ *	4,037,680	552	122	6	700
DJ3IW	3,750,956	357	146	6	800
DL7VOG	3,244,140	366	135	6	900
VK2KM *	3,126,240	175	78	6	n/a
ON6AA	3,076,150	380	125	6	400
AA7UN	3,007,104	371	88	6	1200
K7WM	2,970,240	349	89	6	1200
VA3MM	2,883,884	434	84	6	500
OH2GI	2,782,268	350	131	6	1400
K0KO	2,731,842	383	103	6	900
IV3FSG	2,624,550	292	105	6	600
EA9JZ *	2,596,260	376	133	5	100
W7TI	2,450,872	322	92	6	2200
YU7YG	2,282,926	334	129	6	400
N1RCT	2,047,634	335	103	6	200
GW4KHQ	2,029,388	279	119	6	200
CE8SFG	* 2,012,120	179	68	5	-
SP1MHV	1,877,954	269	131	6	200
N2DL	1,838,916	383	71	6	300
LU8EKC	1,812,385	177	69	5	100
JH1HRJ	1,665,168	182	61	6	600
I2HWI	1,647,942	255	97	6	300
4X6UO	1,621,920	256	66	6	300
G5LP	1,615,350	266	121	6	-
K4GMH	1,451,656	266	71	6	700
EA5FKI	1,357,372	279	84	6	100
YB5QZ	1,287,588	157	69	4	600
LA7AJ	1,221,558	206	87	6	600
W6/G0AZT	1,186,090	215	73	5	1300
SM4GVR	1,183,600	219	80	6	400
DL5ZB	1,182,460	200	110	6	400
N6GG	1,175,266	168	77	6	400
NH6XM	1,141,370	182	58	5	800
OK2SG	1,123,832	180	102	6	200
W4LC	1,064,540	221	81	6	200
JR5XPG	1,004,704	114	56	6	400
W2JGR/O	998,528	213	76	6	800
K7ON	989,364	227	57	6	300
OZ8RO	973,964	180	66	6	200
JA2BY	849,820	113	59	5	1400
EA2IA	843,696	208	84	6	-
VE6KRR	833,800	213	70	5	800
JL3OXR	766,998	106	53	6	300

ar

To "zero beat" a signal is to determine precisely the exact frequency on which it is transmitted. Unfortunately, a lot of operators today either don't know or don't care to zero beat a station's signal.

When I hear a call from another operator I try to make sure that my transmitted signal is on exactly the same frequency as the station calling. When you tune into other stations on your receiver the pitch of the audio output goes up and down as you tune back and forth across the band with your VFO dial.

I usually settle for maximum signal strength on the received frequency, or a pitch I find easy to listen to. I am now ready to transmit on the frequency I am receiving (more on this later).

Two problems I am faced with, at this stage, are:

1. I don't have a narrow band filter; and
2. My receiver is not selective enough.

You may have noticed that you can hear the received signal at varying pitch over a range of 2 to 3 kHz, or even more. If the other station has a very selective filter in his receiver and I transmit 1 kHz or so away from

Following my comments in last month's column about the discontinuance of Morse code on maritime vessels as from 1 February 1999, my attention was drawn to an article written by Frederick O Maia W5YI in the August 1997 issue of *CQ Amateur Radio* magazine under the heading, "Morse Code QRTs on the High Seas". Here are a few excerpts from that excellent article.

"The London-based International Maritime Organisation (IMO) was formed in 1959. One of its goals is to enhance safety of large ships at sea through improved radio communication technology. The current maritime law requires that all passenger and cargo ships of more than 1600 gross tonnage be equipped with radio telegraph equipment and qualified operators.

"In 1972 the IMO began a study of satellite communications. On the 9th of November 1988 at the conclusion of a two-week London Conference, the IMO notified the World that GMDSS (Global Marine Distress and Safety System) had been given the go-ahead by world shipping leaders. Radio Officers with Morse code knowledge will still be needed on older vessels until the 1st of February 1999. Radio Officers are already no longer required on ships that were constructed after the 1st of February 1995, since they must comply with all GMDSS requirements. Licensed GMDSS operators will be required on all large ships but they need not have Morse knowledge. The US

Pounding Brass

Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

where he is listening, he will not hear me when I transmit in reply to his call.

What I have to do is "zero beat" his signal and transmit on the exact frequency. Let's look at an example.

A station, to which I want to reply, is calling on 3.530 MHz. The first thing I do is zero beat his signal, tuning with the VFO until the audio pitch decreases in frequency and disappears at around 3.534 MHz. The audio response is now at 0 Hz although I might be able to detect or hear a slight rise and

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Coast Guard stopped monitoring the 500 kHz frequency in 1995."

I recommend the full article to you for further study in connection with the Morse code requirement in the amateur service, a subject placed on the agenda of the World Radio Conference to be held in 2001. There is only one question which still puzzles me. There are many small vessels under the 1600 gross tonnage plying their trade with cargo and passengers between Pacific Island ports. What kind of distress communication equipment do they use when they get into difficult situations, bearing in mind that some owners of these ships are small companies or individuals who might not want to spend too much money on expensive GMDSS equipment? If you know the answer, please send me a note.

fall in the level of background noise. I have now zero beat the station calling and can now transmit on the exact frequency of 3.534.000 MHz.

At this stage you might be asking how can I still copy the incoming signal, if I cannot hear it?

The answer to this is "Offset". I use either the Clarifier or RIT (Receiver Incremental Tuning) control to alter the received frequency to a comfortable pitch without altering the transmitting frequency of 3.534.000 MHz. This is known as the receiver's offset.

In the CW mode, most transceivers don't transmit on the exact received frequency; they normally have an offset built in, putting the transmitted signal close to zero beat when receiving the CW at an audio tone of a pre-determined frequency. You can consult the transceiver operating manual regarding the correct amount of offset to use, and an explanation of the RIT control.

All that is required of you is some practice to confirm what you have read, and to have some fun in the process. ar

Fjord County - K8VIR/ZL4

Ed K8VIR/ZL4 made many New Zealand County hunters happy when he showed up on 8 January on the ANZA Net (14164 kHz). Ed was in Fjord County, one of the uninhabited counties of the Southern Alps of New Zealand, hence no amateur activity there at all.

In one of the photos which he sent me, he can be seen with his portable equipment with the vertical antenna on his back-pack. Ed said that he will be in and out of Fjord County during February, March and April doing a research assignment. He will try to operate as often as possible. "Watch 14164 kHz at 0500 UTC", he says, "and 14265 and/or 21300 at other times". The QSL cards for his Fjord activity are being printed. His New Zealand address is: Ed Hartz, C/o PO Box 9, Te Anau, New Zealand.

Libya - 5A21PA

Libya, once one of the most wanted countries on the DXCC ladder, is becoming popular as a DX destination. In the last half-a year or so, this is the third expedition to that country, not counting the activity of the handful of local operators and the short individual foreign operators visits in-between.

From 2 March to approximately 8 March, a Belgian group of three amateurs, one of them a YL, will tackle the expected dog-pile. Tiny ON4CAT (YL), Patrick ON4APS and Frank ON4CEL are the participants. The

expedition's home page on the Web makes interesting reading. The group openly says that they are looking for sponsors and donations for the project, "since Libya is totally dependent on DXpeditions to provide them with amateur material". The aim is to provide Ali and Abubaker with a portable PC each.

The group intends to have a reunion with the German 5A2A group and the Austrian 5A28 group, as well as the operators of the Libyan Club station at the Friedrichshafen German Hamfest at the end of June.

The interesting callsign (hopefully approved by the ITU) stands for "celebration of the declaration of peoples authority and the birth of the first Jamahiriya which takes place on the 2nd of March each year".

QSLing is via ON4APS via the Bureau, or direct with return postage (and with a possible 'small donation') to: Piesen Patrick ON4APS, Koolkerkesteenweg 141, B-8000, Brugge, Belgium.

DXCC - To Pay or Not to Pay?

New Rules

Getting that rare QSL card costs you time and money. However, to get the coveted DXCC award certificate will cost you more money in the future.

In this age of economic rationalism, the cost of services has to be recovered from the customer. In the January 1998 issue of *QST*, the ARRL DXCC Desk has announced new fees for the DXCC Award certificate. Here are some of the more interesting details.

*Initial application each year for a member of the ARRL, \$10. Additional application, member \$20.

* Initial application for a foreign non-member is \$20. Additional application for a foreign non-member is \$30.

The above fees refer to 120 QSLs for the first application, and to 100 QSLs for additional application. Each card over these limits costs an additional 15 cents. There is no fee now for the standard certificate and pin. Honour Roll and 5 Band DXCC plaques cost \$30, plus shipping. Applicants must supply return postage and an SASE for any cards or information requests.

All the above fees started on 1 January 1998. The dollar figures are in US currency.

However, some of the above charges have been modified in the new rules for the DXCC award issued by the ARRL on 17 January 1998. The new rules are contained in an 11 page document of A4 size which is too long to publish here. I reproduce now the ARRL summary of the rules which was published in ARRL Bulletin #8.

"Approved by the Board were rules changes for the DXCC program, that had been recommended by the DXCC 2000

Committee. Under the new criteria, no countries currently on the DXCC list will be removed. In the future, countries will be referred to as entities. A political entity will be added to the DXCC list if it meets any one of the three criteria: it is a UN member state; it has an ITU prefix block assigned; or it has a separate IARU member society. The new criteria also replaces all DXCC measurements, including physical separation distances, with metric system figures roughly equivalent to the former distances. While the 57 entities on the deleted list will remain, no new countries will be added to the deleted list in the future. Deleted entities simply will be removed. In addition, the new rules specify a minimum 'island' size of 100 metres measured in a straight line. The DXCC field checking program will remain in place. The effective date of the changes will be announced later this year. The DXCC 2000 Committee was discharged with the Board's thanks."

In the meantime, the new date of implementation of the new rules was decided to be 31 March 1998.

Antarctic Stations

After the summer personnel changeover at various Antarctic bases, here is a list of the stations which are currently active or plan to be active until next December:

* CE9SAC, Adelaide Island, AN-001, between 2230-0200 UTC.

* 8J1RL, Showa Base, Ongul Island, AN-015. QSL via JARL.

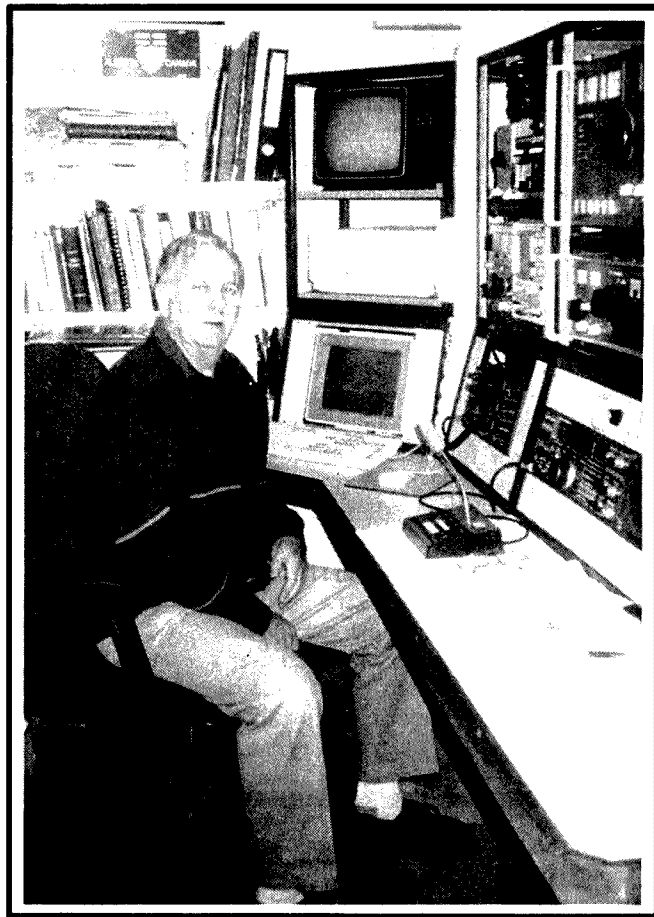
* KC4AAD, Siple Dome Station, 0001-0400 UTC on 14273 kHz, QSL via K4MZU.

* KC4AAA, Amundsen-Scott Base, AN-016.

* CE3RAC/CE9, Patriot Hills, 2200-0100 UTC on 14180 kHz.

* R1ANZ, Mirny Base, QSL via UW1ZC.

* R1ANL - Saam Novolazarevskaya Base, Princess Astrid coast. QSL via UA6AH.



John VK2EJM at the control panel of his impressive station.

* VU2JBK and VU2RAY, 2200-0100 UTC around 14180 kHz. From Maitri base on Queen Maud Land. QSL via VU2DVC.

* CE9AP, Cesar on South Shetlands, AN-010, 2230-0200 UTC between 14180 and 14210 kHz.

* ZX0ECT, Alberto on Commandante Ferraz Base, South Shetland.

* R1ANF on 40, 20 and 15 metres from Bellinghausen Base on South Shetlands.

Future DX Activity

* Daniel F6ARU is now working in Jordan and is active around 0600 UTC on 14180 kHz with the callsign JY9RU. QSL via the Bureau to his home call, or direct to PO Box 154, Maan, 7111 Jordan.

* John TT8JFC is back in Chad for another 11 months. His work contract finishes around the end of November 1998. QSL via John F Cantrell WB4MBU, PO Box 187, Lochloosa, FL-32662 USA. Please note the QSL address shown in February '98 *Amateur Radio* giving the QSL manager as Russell W Madison is incorrect. My apologies.

* Salt 9M6ST is a relatively new amateur on the bands and lives on Labuan Island, OC-133. He will be active soon on 40 metres with his mini-beam. His mailing address is: PO



Ed K8VIR/ZL4 in Fjord County in New Zealand, with the Grebe River and Heath mountains beyond.

Box 80712, Labuan Island, 87011, East Malaysia.

* Charlie K4VUD will be on the air from Nepal as 9NIUD and intends to be active as time permits. QSL via Charles Harpole K4VUD, 3100 N Hwy 426, Geneva, FL-32732-9761, USA.

* The members of the South Sandwich Island Group and The Midway Kure DX Foundation have visited Palmyra Island KH5 in February, Kingman Reef KH5K early in March, and they will be active from Baker Island KH1 (OC-089) between 5 and 12 March. QSL via AC7DX.

* A number of stations will be active from Aruba during February and March, P4OK, P4I2UIY, P40V, and P49V.

* Carlos YNICB was reported to be active on Saturdays on 14215 kHz at 2000 UTC. QSL via YNICB, PO Box 3733, Managua, Nicaragua.

* The Finnish group who was supposed to be active from Guatemala from 18 January to 5 February, had to change plans due to "unforeseen circumstances." They were reported from El Salvador as YSIX.

* Manfred DJ7RJ will be in Monaco from 28 February to 12 March with the callsign 3A/DJ7RJ mainly on CW. QSL via the home call.

* If you missed the recent Maldive operations by the 8Q7AA group, tune in until 11 March to work Hans DL8NBE as 8Q7BV and Rolf HB9DIF as 8Q7BV from Dhiffushi Island in the South Ari Atoll in the Maldives. QSL via the home calls, Bureau only.

* Bob N6BFM is on the air from Kuwait as 9K2ZZ for about one year. QSL via W8CNL.

* Mike F5RLE is active until 9 March from Burkina Faso as XT2DM. QSL to home call.

* Pagalu Island, 3C0. Four to six operators will be there at the beginning of March, mostly on 160, 80 and 40 metres.

* Fernando is active again from Angola as D2BB until the end of 1998. QSL via W3HMK.

* Advance notice! Brandon Island Archipelago 3B7 will be activated by a group of Swiss amateurs from 5 to 17 May. More details later.

* John KA3DBN/VP2EBN is now in Africa until about 19 March. He intends to be active from Botswana (A22), Lesotho (7P), Swaziland (3DAO), Zimbabwe (Z2), and Mozambique (C9). QSL via the Bureau to K3BEQ.

* Jon 3DA0CA is now active on 160 metres, 1.827 MHz, between 2100 and 2200 UTC listening for Oceania and Japan.

* Vladimir RU6FP is active, mostly on CW, from Nepal as 9N1FP for the next four months on 20 and 40 metres only. QSL via RU6FP Vladimir Zakharov, Kulakova 27/2 - 116, Stavropol, 355044, Russia.

Interesting QSOs and QSL Information

* CN8TW - 14 MHz - SSB - O900 - Dec. QSL to CBA (Call Book Address): Ali Sekkat, 703 Ave de Fes, California 20 150, Casablanca, Morocco.

* 5T5TY - Ghal - 14 MHz - SSB - 2130 - Dec. QSL via William M Loeschmann N5FTR, 717 Milton, Angleton, TX 77515, USA.



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* FG5FC – 14 MHz – SSB – 2000 – Dec. QSL via Hubert Loubere F6DZU, 289 Ave de Caupos, F-40600, Biscarosse, France.

* FT5XN – Hellos – 14 MHz – CW – 0315 – Jan. QSL via Gerard Ribes F6PEN, 16 rue Viollet, Le Duc, Toulouse, 31100, France.

* OA463QV – Cesar – 14164 – SSB – 0529 – Jan. QSL via Cesar Armando Aguirre Mesinas OA4QV, Box 957, Lima 18, Peru.

* J28BU – 24 MHz – CW – 1000 – Dec. QSL via Bruno DeSailly F5OYM, 4 Rue d'Aurelle de Paladine, F-44000, Nantes, France.

* VP8CTR – Roman – 14204 – SSB – 1113 – Dec. QSL via Dominik Weiel DL5EBE, Reinshagener Str 99, D-42857, Remscheid, Germany.

* BY5SY – Lin – 21252 – SSB – 1052. QSL via PO Box 239, Fuzhou City, China.

* 3A2MD – Laura – 14181 – SSB – 1332 – Dec. QSL via Marcelle Laura Martinez, 73 Bd, Jardin Exotique, MC-98000, Monaco, Europe.

* FT5ZG – Eric – 14278 – SSB – 1526 – Dec. QSL via F5RQQ, (new address) Jean Marc Vigillier, 4 Impasse Des Lys, 63800 Courmon-d'Auvergne, France.

* YJ0AIO – Holger – 7006 – CW – Dec. QSL via Fritz Bergner DL1VRO, Sternamm 199, D-12378, Berlin, Germany.

* C31MO – Michel – 21210 – SSB – 1023 – Dec. QSL via Miguel de Diego Aznar, C/o Tossaleti Vinyals 6, Xalet la Balma, Santa Coloma, Andorra.

From Here There and Everywhere

* I am sorry to report that Hans VK2AOU is a silent key. He was not a DXer, but Hans had a 67 year connection with amateur radio both in Germany and Australia. He was involved with the production of ceramic capacitors, for which he held a patent, with Plessey Ducon, and developed the VK2AOU tri-band amateur antenna, the forerunner of some German, Japanese and US antennas.

* Had an interesting QSO with Herik FR5DX. We discussed the activity from Tromelin Island. Herik said it is extremely hard to get permission to land on Tromelin, Glorioso, Europa or Juan de Nova Islands. Permission is granted only to people on Government business, like meteorology, or you have to be a scientist carrying out some research project. The situation is similar on Crozet, Amsterdam and Kerguelen Islands. Henry FR5ZQ/T was active in January from Tromelin, but it was not easy to catch him as heavy pile ups and poor propagation did not help.

* Jerry Branston AA6BB/7 was a well known QSL manager who became a silent key in late August 1997. His logbooks and QSL chores were taken over by the South

Sandwich Island Expedition group. Ron AC7DX has been nominated as QSL manager. His address is: Ron Lago, PO Box 25426, Eugene, OR-97402, USA. There are more than 70 DX calls on the register for which there are logs going back to 1974.

* QSLs for contacts made on 15-17 December with 3V8BB (Tunisia) should go via F6FMX.

* Some Israeli stations are celebrating the 50th anniversary of the Israeli Amateur Radio Club (IARC) by using pioneer amateurs call signs who are now silent keys. For example, Arie 4X6UO used the call 4X50FB/SK. The celebration is from January to April inclusive and an award can be obtained for working a total of 50 QSO points.

* Doug VK0YQS is active from Macquarie Island but only on 6 metres. He has a limited licence. Some activity under his call sign on 40 metres in the second part of January was the work of a pirate.

* CT98AXS celebrating EXPO 98 was very loud on 14254 kHz at 1623 UTC in Sydney.

* David 9V1RH/VK3QV advises me that the Singapore QSL Bureau works very well. The address is PO Box 2728, Singapore, 904726.

* By now, everybody who worked Tom as VK0TS, or as VK0ANARE, should have received his QSL card. Tom was very busy for several weeks filling in the confirmation cards.

* David 9V1RH has confirmed the details about the Amateur Radio Club of Vietnam in January *Amateur Radio* as being correct.

* Activity from Minari Torishima (formerly Marcus Island) is very limited these days. It is a 'closed island', meaning that only those who are on official Japanese Government business have landing rights. There is a small Japanese weather station on the island with 10-15 personnel who might or might not have amateur licences.

* In the October '97 issue of *Amateur Radio* I mentioned that I heard VM4AA working on the band and I said that the call sign was officially allocated to "Macka" in Runaway Bay, QLD. Later I received a number of protest phone calls from a variety of VK amateurs stating that I was wrong. In December I had a QSO with VM4AA and I now have received his QSL card which tells an interesting story. The operator of this special call is a retired RAAF Squadron

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Leader who is now 78 years old. Macka, as he calls himself, was first licensed in 1932 as VK3FM, then as VK2IM, VK2VM and again as VK3FX. After WWII, he resumed amateur activity as VK3FX, then became G2AA (attending RAF Radio College) and back again as VK3FX, VK4PY, VK9AR (in PNG), then P29AR/mm, and VK4DU. In 1983 he was awarded the special call VM4AAA as Wing Commander DFC, AFM, AE by the then Minister of Communications, Michael Duffy, in recognition of extended participation in the amateur service. The call sign VM4AAA was replaced recently with the call VM4AA. This is the only Australian amateur call sign with the VM prefix. The 1998 WIA Call Book still lists him as VM4AAA under the heading "Special call sign".

* The "Southern Cross DX Net" has returned to the 20 metre band after a long absence. Alan VK4AAR announced that the net will be operating for the time being only on Fridays, Saturdays, Sundays and Mondays with a variety of net controllers at 1100 UTC on 14255 kHz.

* Wally from the Russian Mirny station will go home during March. He has been at Mirny since July 1996.

* There is now a new incoming Canadian QSL Bureau for the VE9 and VY2 prefix call signs. The address is: VE9-VY2 QSL Bureau, Box 12-255, 1633 Mountain Road, Munton, NB, E1G 1A5, Canada.

* QSLs to the recent 8Q7AA Maldives expedition should be sent either by the bureau via N7TX, or direct to Steve Thompson, 119 E Jasmine St, Mesa, Arizona, 8 5201-1811, USA.

* According to Fred Laun K3ZO, Trinidad and Tobago recently allowed no-code licensees to use all HF bands. The no-code licensees can be distinguished by the use of the 9Z4 prefix.

QSLs Received

TT5JFC (2 w – WA4ZJB); V51SG (5 w – S Graf, PO Box 116, Tsumeb, Namibia, Africa); EP2SMH (5 m – Mohsen Hossaini, PO Box 17665-441, Tehran, Iran); AP2KSD (3 m – PO Box 700, Rawalpindi, Pakistan); 7Z500 (4 w – N2AU); VS97SAR (6 m – XRW).

Thank You

Many thanks to my amateur friends whose assistance is a great help in compiling these notes. Special thanks to: VK2EFY, VK2KFU, VK2LEE, VK2JF, VK2XH, VK2ZRH, VK4AAR, VM4AA, VK5WO, VK0TS, 9V1RH, and the publications *CQ Amateur Radio* magazine, *QRZ DX*, *The DX News Sheet* and the *425 DX News*.

ar

Spotlight on SWLing

Robin L Harwood VK7RH

5 Helen Street, Newstead TAS 7250
(03) 6344 2324

e-mail: robroy@tassie.net.au
VK7RH@VK7BBS#LTN.TAS.AUS.OC

FFL Closes

Yet another major maritime HF communications station has finally ceased operation. FFL, St Lys Radio, which has been operational for over 40 years, closed on 16 January. Many will remember their distinctive voice mirror tape which included a piano accordion playing a local tune. The French station was the main HF maritime communication link for France and its territories. The final day was very emotional and was extensively covered in the French electronic media. Users of FFL were directed to either 3A2 in Monaco or OST, Ostende Radio, in Belgium. Ironically, the senders for 3A2 are in French territory close to the tiny Mediterranean principality.

The next HF maritime station slated for closure is PCH, Schevingen Radio, in Holland. This is one of the oldest continuous maritime communication stations, commencing prior to the First World War. PCH will close sometime in the next twelve months, but no exact date has yet been given.

Globe Wireless

Globe Wireless, an American maritime operator, is convinced that HF communications are still commercially viable. They have been buying or leasing many of the old HF marine communications stations world-wide and remotely operating from their base in California, on both analogue and digital modes including a modified form of Clover. The stations are located as follows:

KFS – Palo Alto, California USA
KEJ – Hawaii, USA
WLC – Rogers City, Michigan USA
WNU – Slidell, Louisiana USA
VCT – Tors Cove, Newfoundland CANADA
SAB – Gothenburg Sweden
ZLA – North Island of New Zealand
ZSC – Cape Town, South Africa
VIP – Perth, Australia
A9M – Bahrain.

They welcome signal reports from the SWL community via either the Post Office at: Globe Wireless, 1 Meyn Road, Half Moon Bay, CA 94037 (attn: Michael Beck); or the Internet at: qsl@globewireless.com

Four additional stations have been added to their network. LFI (Norway), LSD86 (Argentina), 8PO (Barbados), and KHF (Guam) are online and fully operational. Their frequency list is too large to include here but visit their Website at <http://www.globewireless.com>

Retail Short-wave Outlets

One of my interests in the hobby is listening to utility stations, which are scattered throughout the entire HF spectrum. One of the useful aids I have of keeping track with happenings is the World Utility Network a "listserv" from Grove, a well-known short-wave retailer. The list has been indispensable to me, and it suddenly went down on 30 January without any prior warning.

Bob Grove has been a staunch advocate for the monitoring hobby and has come out against recent attempts by the US Congress to restrict the public's right to pursue the hobby. Legislation now prohibits new scanners and receivers from including the cell-phone allocations around 800 MHz;

apparently digital networks aren't sufficiently advanced compared to here in Australia.

Also at the end of January, another major retail short-wave outlet, the EEB, closed its retail wing to concentrate exclusively on commercial and government sales. Grove, however, is still in business but has sold its Internet site, which will mean that many "listservs" who have been using it for free will either have to pay commercial rates or find another host.

Radio New Zealand International Future Uncertain

Yet another international broadcaster faces an uncertain future with Radio New Zealand International now under scrutiny from the government in Wellington. Several domestic networks were privatised and public broadcasting slashed with commercial broadcasting now in a dominant position.

Many Pacific Island nations rely on RNZI to provide news and sports coverage into the region. Vocal protests have not only come from there, as RNZI has built up quite a following amongst short-wave enthusiasts around the globe.

Well, that is all for this month. Keep listening and good monitoring.

ar

International Amateur Radio Union Monitoring Service (IARUMS) – Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-Ordinator

Freepost No 4 Rubyvale QLD 4702

VK4KAL@VK4UN-1

Tel: 07 4985 4168

Region 3 News

(from February 1998 issue of Region 3 MS News)

Improved band conditions have once again brought in a few new intruders. CB type transmissions in the bottom part of 10 metres require positive ID. They are thought to emanate from service vehicles, ie taxis, but we need to further refine these reports.

Broadcast stations also feature a lot lately and once again a positive identification is quite essential before we can make representation to the offending stations. Commercial broadcasters are required to give the station ID on the hour.

It is gratifying to hear some intruders being vigorously challenged by amateurs.

Intruders, especially those appearing in the exclusive portions of our bands, have no right to be there. Those who are prepared to take the time to make communication difficult for intruders are to be congratulated and encouraged. Keep up the good work.

Following a discussion the Region 3 Coordinator had with the International Coordinator, ZL1BAD, reporters are urged to concentrate on intruders found in the exclusive portion of the bands. Radio regulations empower us to do something about these pests. Intruders found elsewhere are more difficult to get rid of. The Indonesian problem does not appear to have increased and this is good news for the 40 m operators.

Thanks is due to all who sent in reports; they have helped in removing some broadcast stations, eg VOA, CNR and BBC were all removed from our bands. Remember, we require accurate frequency measurements which can be passed on to engineering staff at the offending stations.

January Summary

(Ui means unidentified)

Freq	Date	UTC	Mode	Details
3.534	230198	2028	A3A	UiBC, Very Unstab*/- 500 Hz
3.540	0201	1305	A3E	R Korea F/M news reading
3.560	1101	1105	mxld	UiBC, Asian net, mny freq m/f, usb
3.614	0501	2020	A1A	GKY1 ... Back agn
3.630	0201	2120>>	1K12GL?	Possibly PACTOR net??
7.000	0231	1215	A3J	UiAsian nets> 7.019, non amateur
7.005	1701	1229	J3E/U	UiBC, de 7.038 non amateur
7.070	1001	1550	A3E	UiBC, poss IRAN area
7.085	1001	1540	A3E	V08ME, Asmara domestic service
7.0874	1201	0930	F1B	UiVFT, blocked freq 8 hrs
7.095	1101	1645	A3A	Jakarta, same as 9.565 MHz
7.105	2001	0920	-	UiJAM, 7095> 7,110, 1900 close
10.123	1401	1052	A3J	UiBC, music/news, 3 freq mixd
10.138	1001	1222	A3J/L	Ui Asian net, non amateur
14.125	0801	0738	F1B	UiVFT, 250 Hz, 144bd, tfc & idle
14.125	1001	1235	F1B	UiVFT, 425 Hz, 50bd, 100 wpm/14.001
14.2115	3101	0000	F1B	RDL, 850 Hz, 100bd, Smolensk, CIS
14.240	2001	1100	A3A	BC China, m/f news, H 2/7.120
14.250	2601	1150	A3A	VOA
28.890	2301	1100	A3E	V Distorted, sum AM/F3, spur?

I have purposely omitted R7B and B9W observations. These are available if required, but much time is wasted on the whole, for modes of dubious value. The average amateur has not got the gear to decode these modes. Anyone desirous of a printout of these modes, please contact me.

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Mention was made in the October column regarding the Friendship Amateur Radio Society (FARS) and the possibility of forming an Australian Group to become an Affiliated Member.

Since then, they have forwarded to me a copy of their Charter which Wally VK4DO has printed out in the form of a nice looking booklet. Some copies have been forwarded to Clubs and Groups, etc where we think there may be some interest.

Ian VK3DID has contacted me pointing out that there should not be a problem regarding a following of keen CW operators, which is great to hear. Should you have a definite interest in becoming involved, either in the ARDF, CW, or social spheres, it would be good to hear from you. This way we may obtain sufficient numbers to form a "core group" and get into some serious discussion regarding the above.

As I will be absent for a number of weeks, and in order to hear about "The Melbourne Fox Hunting Group", the remainder of this column is handed over to some members of that Group. Mark VK3JMD, his wife Sue VK3I.SL, and Jack VK3WWW have kindly offered to assist.

Incidentally, a few XYLs have taken an interest in ARDF due to their OMs involvement. Sue was "talked" into competing at the 1996 Townsville Region 3 event and was "hooked". Two other e-mail acquaintances, one in the US (WB6BYU)

ARDF – Amateur Radio Direction Finding

Ron Graham VK4BRG
 PO Box 323 Sarina QLD 4737
 E-mail: rongraham@magnet.com.au
 Packet: VK4BRG @
 VK4BRG.#CQ.QLD.AUS.DC

and the other in New Zealand (ZL2TT, whose XYL is ZL2GT) have had their XYLs become involved. Is there a message here?

Over to the Melbourne Group, and many thanks to them.

Ron VK4BRG

Melbourne Fox Hunting

The Melbourne Fox Hunting group is involved in a variety of events throughout the year including the monthly Friday night foxhunts, Balloon Hunts, ARDF, Hamventions, the Victorian Championships, and the yearly trek to Mt Gambier for the Australian Foxhunting Championships. The column this month will be devoted to the local monthly night foxhunts and how the sport has developed over the years.

A Bit of History

The origins of Melbourne foxhunting are a little unclear but we believe it started after WW2. From the correspondence we have received, several names seem to feature prominently in the history.

One of these is Ian Bryce VK3BRY who was the developer of the first whoopee sniffer. The whoopee mode has featured in most sniffer designs since and is considered the best type of S meter for sniffing. Ian also had an attachment which enabled use of the car's radio. Ewen Templeton VK3OW remembers Ian's Triumph car. Ewen was driving it one night on the Tullamarine freeway at about 150 km/h and Ian said to him, "I think the fox is further away than I thought so can we go a bit faster"! Of course this speed is never achieved these days!!

Another two names which pop up quite regularly are Gil Sones VK3AUI and Kevin Phillips VK3AUQ. Greg Williams VK3VT writes: "The first pick in the roof I saw was Kevin Phillips who drove an Anglia rally vehicle. Evidently Gil (the beam swinger) complained of the weather one night so Kevin grabbed the pick and punched a hole in the roof. Unfortunately, it was in the wrong place so he just went again and made another. This method made life easy for Gil and meant that there was no need for roof racks!

"Mark VK3PI had a yellow Escort and also put a hole in the roof for easy beam swinging; I'm not sure he used a pick. Mark

also removed the front seat and set up a rack full of equipment; a little like some of our current teams!"

Another of the group to put a hole in his roof was Lionel VK3NM, who was warned by the police that having an overhanging antenna didn't look safe. With this in mind, Lionel used a 50 mm hole saw to make the hole in the centre of the roof. When the hole was not required it was sealed with a bath plug which was surplus to his needs.

It's funny how people remember things differently. Greg talks of the concept of yelling at other members of his team but not really meaning it – well not much anyway! David Beard remembers things differently.

Fifteen years ago there was time for a "cuppa" between hunts and no-one got worked up or impatient. Waiting around for the next hunt never seemed to be much of an issue. It was more of a social occasion and people used the opportunity to reflect on the previous hunt.

Mark Harrison VK3BYY recalls Gil and Kevin's relaxed approach to foxhunting, ie drive as close as you can to the fox, then stand back and watch the other hounds get tangled in blackberries if it looked like the fox was a bit far from the car.

Mark Diggins VK3JMD recalls when he started foxhunting that the fox was often in the car. If the Tx was hidden, though, it wasn't far away. A few years back there was regularly 12 or 13 teams each night. Around this time we had four TV crews come along to get the low down on the sport. The average at present is about seven or eight teams.

Foxhunting 90's Style

A typical night consists of about five to eight hunts. These hunts may be individual or continuous and usually require a run to find the Tx. All hunts are on 2 m but some may also include an additional band (10 m, 6 m or 70 cm) that had been nominated the month before.

Scoring is like golf with the lowest score of the night being the winner. On a single hunt, the first team to find the fox gives their call sign and the fox for the night gives that team a score of zero and starts the clock. Each following team to find the fox scores one point for each minute, or part thereof, they arrive after the first team. This is done until all teams find the fox, or 10 minutes have elapsed, at which point the fox calls the hunt over and gives out the meeting spot on the liaison frequency.

At the end of the night the hounds meet for supper and the scores for the night are totalled. The team with the lowest score is declared the winner and receives four points towards the yearly title. Second gets three points, third gets two points, and all other

teams who competed for the night get one point. The fox for the night also gets three points.

Today's equipment has come a long way from the converter and car radio combination, to the sophisticated equipment many teams use today. Cathode ray tubes were popular for a while but are being replaced with laptops. Street directories are being replaced by CD ROMS with GPSs and S meters are having Digital Signal Processing added to them.

Receivers vary from hand-helds, to scanners, to HF rigs with down converters, and some homebrew rigs as well. Antennas are also quite varied, but the most favoured is the three element Yagi designed by Greg VK3VT which was published in the October 1988 issue of *Amateur Radio*.

Sniffers also vary in age from the Ian Bryce VK3BRY amplified crystal set to the programmable, microprocessor controlled, auto ranging design of Bruce VK3TJN and David Beard. The most widely used, though, would have to be the Ian Stirling VK3MZ design which is now sold by Ron VK4BRG.

Some of the other DF equipment used includes Doppler scanners and Watson Watt receivers.

There is a Website for the Melbourne foxhunting group run by Andrew VK3KIR which can be found at <http://www.ozemail.com.au/~amac/foxfox.html>. There is also a mail reflector that is used for information on hunts and technical details. To subscribe to this list send an e-mail to majordomo@planet.net.au with the words *subscribe melb-fox* in the body of the message.

Well, that about sums up the Melbourne monthly hunts. We hope you enjoyed the VK3 perspective.

Mark VK3JMD, Sue VK3LSL and Jack VK3WWW

Stop Press

A new Victorian ARDF group is starting up – watch this column for more information.

The Victorian Foxhunting Championships will be held on 4 April this year – contact Ewen VK3OW for details.

ar

National co-ordinator
Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org
AMSAT Australia net:
Control station VK5AGR
Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.
Frequencies (again depending on propagation conditions):
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Current keps are available from the Internet by accessing the AMSAT FTP site, [ftp.amsat.org](ftp://ftp.amsat.org) and following the sub-directories to "KEPS".

AMSAT

Bill Magnusson VK3JT

RMB 1627, Milawa VIC 3678
e-mail: vk3jt@amsat.org

Phase 3D Launch Update

Karl Meinzer DJ4ZC made the following announcement recently via ANS.

On 20 January, Phase 3D Project Leader and AMSAT-DL President, Dr Karl Meinzer DJ4ZC, met with ESA officials in Paris to discuss the possible launch of the Phase 3D satellite on the third test flight of the Ariane 5 launch vehicle, AR-503. Dr Meinzer gave a short presentation on AMSAT, its background and the history of co-operation it has enjoyed with ARIANE for many years. He then outlined the development history of Phase 3D and expressed a strong desire for a launch on AR-503.

The ESA officials indicated willingness to consider a launch on AR-503 but made no commitments. They stated that they are also

investigating the possibility of placing another payload on the mission that would preclude launching Phase 3D. Nevertheless, ESA did agree to make an initial study of the configuration that would be associated with Phase 3D, were it to be launched on AR-503 along with several other payloads.

They also agreed to investigate other possible launch opportunities, including ARIANE 4s. Another meeting is scheduled for the end of February, at which time it is hoped that more definite information will be available.

Dr Meinzer said on returning to Marburg following the 20 January meeting, "ESA is making bona-fide efforts to identify a launch for us. I think we stand a good chance." Dr Meinzer and AMSAT-NA officials agreed that our job now is to get Phase 3D completed and tested, so that it will be ready to go if ESA gives the 'green light'. AMSAT-NA Executive Vice President, Keith Baker KB1SF, likened this to going to the airport to 'stand by' in order to get on a fully booked flight. "That strategy often pays off", he added.

AMSAT-NA HF Net

With the general improvement of HF propagation conditions accompanying the rise in the new sunspot cycle, many satellite operators will want to begin listening again to this net. Here are some details from the AMSAT News Service. This net meets on or about 14.282 MHz at 1800 UTC for the 'pre-net warm-up' followed by the ANS Bulletin Session at 1900 UTC.

A test will be carried out on 15 metres on the old frequency of 21.280 MHz. Depending upon the success of this experiment, the 15 metre AMSAT Net may be re-activated on a regular basis. It may pay to keep an eye on that frequency as well.

MIR Update

At the time of writing there is no sign of any voice or packet activity from MIR. The last I heard was that the packet gear was ready to be switched on as soon as the new TNC parameters were loaded. This would be done when the crew were able to spare some time from their busy schedule.

AO-10 Activity

A number of VK stations have reported good but variable conditions on this satellite. AO-10's signals appear to be improving and can be quite strong, even at apogee. There is even a suggestion afloat that AO-10 may have switched itself to the high gain antennas. There is no hard evidence for this yet and it is difficult to see how this would happen, but then strange things can happen at AO-10's stage of life.

AO-10's apogee has moved into the northern hemisphere so operating conditions will become more difficult for us in the south as time goes on. Get in and make the most of things while they last. It will be about three years before AO-10 will return to the south and who knows what its condition will be by then.

PacSat News

UO-22, KO-23 and KO-25 have been providing excellent service. KO-23 has been restricted to only one uplink frequency for some time and only a complete reset by the Korean control station will fix this problem. Most people will not have noticed it and I have only seen the upload 'House Full' sign once in the past few months.

UO-22 continues to carry large amounts of Satgate packet radio traffic and the recent period of activity from the frozen continent seems to have come to an end with the ending of the southern summer period of activity.

Andre VK0MAP has just closed down his station at the time of writing. Unfortunately, his stay coincided with the Australian school holiday period so his offer to answer questions on his environment for students was not taken up by many in our part of the world.

The Future of Mode A

KO-23 carried this message from AMSAT-UK recently. Please give it your consideration:

From time to time there appear messages, papers, pleas, etc saying:

1. There is a need for Mode-A satellites for new satellite operators to train on, as well as for those amateurs who prefer analogue rather than digital operations; and,

2. The present supply of Mode-A satellites is fast decreasing with the demise of RS-10/11, problems commanding RS-12/13, battery troubles with RS-15, and the non-availability of RS-16. No Mode-A spacecraft has been produced by a Western group for the past 20 years (OSCAR-8 in 1978).

AMSAT-UK are giving some consideration to this state of affairs but, before we go further, we need to determine whether a new Mode-A package would be wanted, be used or be supported. In other

words do you, the satellite operators, want it to happen? Is it worth someone's time and effort to design, produce, and launch? How many people would use a new Mode-A spacecraft?

It would be pointless to spend several hundred thousand dollars if it only attracted a few hundred users (so the cost is 1000 dollars per user). Would YOU use it? This several hundred thousand dollars doesn't just appear magically, the money has to be raised from you, the satellite operators.

Would you give your own money to a group who promised to develop and launch a Mode-A transponder?

The message called for a response by end of February but such an important question would bear answering anyway. If you have strong feelings about this proposition please send your reply to:

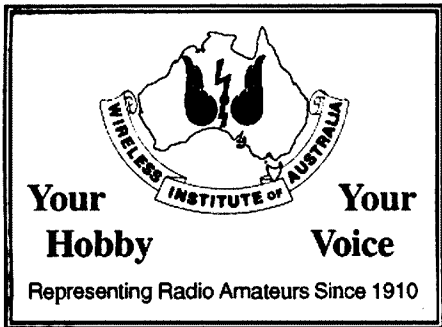
Packet: G3RWL @ GB7HSN
E-Mail: g3rwl@amsat.org
Satellite: OSCARs 16/19/22/23/25

The survey is being conducted by Richard Limebear G3RWL, Communications Officer, AMSAT-UK.

South Pole Monthly Climatological Summary for January 1998

This message appeared on KO-23 from Andre VK0MAP shortly before he departed the South Pole Station. Note the remarks on wind direction! Some data has been removed for brevity.

TEMPERATURE:
AVG TEMP..... -27.8(C)/-18.0(F)
DEPARTURE FROM
NORMAL..... +0.3(C)/+0.5(F)
MAX TEMP -20.9 (C)/- 5.6 (F) ON DAY 9
MIN TEMP..-39.2 (C)/- 38.6 (F) ON DAY 28
SKY COVER:
AVG CLOUD COVER (10ths)...08
DAYS CLEAR..... 02
DAYS PARTLY CLOUDY..... 04
DAYS CLOUDY..... 25
WIND:
AVG WIND SPEED... 8.8 MPH OR 7.6 KTS.
PREVAILING WIND DIRECTION (GRID) NORTH OR 360 DEGREES.
MAX WIND..... 24 MPH OR 21 KTS ON DAY 08
MAX WIND DIRECTION..... GRID NORTH.
AVG VECTORED WIND... 008 DEGREES AT 6.4 KNOTS.
STATION PRESSURE:
AVG PRESSURE..... 687.8 MBS OR 20.311 IN. HG.
DEPARTURE FROM NORMAL..... -2.3 MBS OR -0.068 IN. HG.
HIGHEST PRESSURE..... 699.2 MBS OR 20.647 IN. HG. ON DAY 14



LOWEST PRESSURE..... 681.1 MBS OR
20.113 IN. HG. ON DAY 24
SUNSHINE:
SUNSET..... 20 MARCH 1997
AVERAGE HOURS/DAY..... 15.3
PERCENT OF POSSIBLE..... 64%
SNOWFALL..... TRACE; AVG NET
CHANGE AT SNOW STAKES +1.494
INCHES.
VISIBILITY... 5 DAY(S) OF VSBY 1/4
MILE OR LESS.

BALLOON FLIGHT DATA:
NUMBER OF SOUNDINGS FOR THE
MONTH... 62
AVG HEIGHT OF SOUNDINGS.... 16.5
MBS OR 31148 METERS ABOVE MSL.
HIGHEST SOUNDING.....4.2 MBS OR
38069 METERS ABOVE MSL.
ON THE DAY 27 /00Z SOUNDING.
RECORDS:
Day 30 – The highest average wind speed
of 14.0 kts/16.1 mph, broke the previous

record of 12.0 kts/13.9 mph set back in 1958.
January 1998 is marked as the cloudiest
January on record. There were 25 cloudy
days, breaking the previous record of 19
cloudy days set in 1971.

Congratulations go to Andre and others
who have recently given us all some
interesting new satellite stations to work from
a most forbidding location at the centre of the
frozen continent.

ar

Beacons

A message from Don VK6HK states that
the VK6RPH beacons on 432.460 and
1296.460 MHz are out of action from
27/1/98, for maintenance. The 50.066 and
144.460 MHz beacons continue to operate.

Wally VK6KZ says that the Busselton
beacons on 144, 432 and 1296 MHz were
turned off on 21 January, after operating for
nearly 15 years. Due to corrosion, the tower
carrying the antennas has been condemned
and will be removed. It is unclear whether the
replacement tower will be able to carry new
antennas.

The WA VHF Group which provided these
beacons plans to add Cape Leeuwin to its
beacon network and if possible use the
Busselton site for beacons on 1296 MHz up.

VHF Reflectors

The use of reflectors comprised of e-mail
messages has certainly escalated in recent
times. The VK-VHF reflector, for one, is very
popular for the quick dissemination of news
regarding various VHF contacts and other
relevant information. The UKSMG Internet
Six News has been a great source of 50 MHz
information.

Of course, other matters are aired and
discussed. At present, various amateurs are
having their say on the use of mobile phones
to set up contacts during Field Day Contests
with, as always, some for, some against.

The old perennial of points scored for
contacts in the Ross Hull and other contests is
again being aired, particularly as it applies to
six metres and for contacts in the spectrum
above 2.3 GHz. Most of it is well thought-out
and reasonable, but it is more in the realm of
the Contest Manager than these columns – I
can only give a limited view.

As always, occasionally undesirable
views are publicly aired in relation to certain
amateurs, with comments best left off the
reflector and sent directly to the person/s
concerned, with a CC to anyone else who
should be notified, for whatever reason. But
that will always happen where there is a
wide-ranging forum, although at times I
think some people would be wise to have

VHF/UHF

An Expanding World

Eric Jamieson VK5LP
PO Box 169, Meningie SA 5264
Fax: 08 8575 1777
Packet: VK5LP@VK5WI.#ADL.#SA.AUS.OZ
E-mail: vk5lp@ozemail.com.au
All times are UTC

second thoughts about the contents of their e-
mails; I certainly would not like my name
appended to some of the things I have read in
e-mails!

In the light of a few recent comments,
apparently seen as undesirable, originating in
VK3 and appearing on the VK-VHF reflector
and channelled to Internet Six News, Geoff
GJ4ICD has decided enough is enough and
has withdrawn the UKSMG Internet Six
News bulletin. It doesn't paint a very good
image of VK to the world's amateurs. I am
saddened that Geoff believes this action is
necessary, but thank him for the great service
he has rendered to 50 MHz during the past
three years.

It has always been my policy that this
column will not become embroiled in issues
which may be detrimental to the image of
amateur radio. Hence the rare situation which
has caused the above paragraph to be written.

Also, it is not that I am disinterested, but
there is little space for recording the views of
parties on many individual subjects, which is
a pity, in some ways, but unless adequate
coverage can be given, the intentions of the
particular writer may be misconstrued.
However, I like to be party to such
discussions and suggestions and thank those
who keep me informed. I refer here to Ross
Hull Contest rules, scoring tables, mobile
phone use and other related issues.

I have an "archived" directory with sub-
directories storing masses of information

retrieved from e-mails and other letters
received over the years, covering a wide
range of subjects. People may be surprised at
what I have preserved as useful reference
material, updated almost on a daily basis!

Corrections

In my January 1998 column, in my
references to five metres, I incorrectly listed
the South African station as ZS6RO. It should
read ZS6HS. Bert ZS6HS advised me by e-
mail of the need for correction.

First VK to HB9 QSO should read:
VK8ZLX to HB9SJV on 15/02/92 at 1115.

Antarctica

It has been done again. Congratulations to
Peter PY5CC in GG54re, who worked
LU1ZC in FC97qb on 14/1 at 2150. Peter
kindly answered my e-mail with these
details: "I started hearing CX stations and
then LU stations from Buenos Aires area with
5x9+40 dB signals at 2000. The propagation
moved to the south and then I worked
LU9AEA/x in the southern part of Argentina,
in Patagonia area, FE60 Grid, with a strong
signal from his mobile station.

"I tried to connect to the Packet Cluster to
find where LU1ZC was, and found him on
14.178 MHz working LU and PY stations. I
invited him to QSY to 50.105, a clear
frequency, and copied him 5x1/5x2 on SSB.
He copied me 5x9. I used an FT620B + 1 kW
Dentron MLA2500 + 9 el M2 two wavelength
Yagi. Antarctica now gives me seven
continents worked, with 151 countries
confirmed on 50 MHz. My only contact with
VK was to VK7IK in QE37 during Cycle 22."

A further Antarctic contact was made to
LU1ZC by PY2XB at 2120 on 25/1. PY5CC
also worked LU1ZC again about that time on
CW. The distance between PY5CC and
LU1ZC is about 4222 km.

[VK0AQ was worked in November 1993
for a world first Antarctic six metre QSO by
VK3OT, VK3LK and VK5NC. VK3OT was
the first to contact seven continents on 50
MHz SSB. In 1995 VK0IX Casey in
Antarctica was worked in VK1/VK2/
VK3/VK5 by about 50 stations. Best DX to
VK0 is around 4800 km.]

Warning of RADAR

Steve VK3OT/KL7 sent the following: "Early warning. Anchorage (Alaska) Daily News on Jan 14 1998 page B3, reported that scientists from the Alaskan University intend to expand the current ANC RADAR (49.635 MHz) in conjunction with the John Hopkins University, to erect a 20 by 50 foot high antenna on Kodiak Island, to add a northern arm to the Super DARN International System of Radars to map auroral events between 60 and 200 miles above the earth. DARN is DUAL AU Radar Network.

"The radars are remotely operated and continuous duty and will have six sites in Finland, Canada and Alaska, supplemented by additional sites in Kurguelen Island, Antarctica four sites, and Tasmania, Australia. Also in British Columbia at King Salmon. They are strong and over S9 on 49.635 at 50 miles in the beam pattern. All antennas can be steered to 16 different directions on an arc of 90 degrees."

I'm sure the Channel 0 operators will welcome them with open arms! The frequency should fit very nicely alongside one of the Channel 0 stereo outputs!

Six Metres

Throughout January, Mike ZL3TIC consistently reported American Samoa TV video on 55.250 and sound on 59.750 MHz at S9, also other strong video signals around 49.750 MHz. On 7/1 at 0055 he worked YJ8UU 5x9. On 9/1 at 0015 David ZL4TBN advised him that Australian pagers on 148.183 MHz were S9. Mike called many times on 144.100 MHz but no answers. At the time he said that six metres was dead and nothing on 57, 69 or 86 MHz, but strong FM broadcast stations were on 100.9, 101.7 (Hobart), 103.3 and 105.7 MHz but the signals were very distorted. On 14/1 between 0446 and 0506 ZL3TIC worked JA1, 2, 4 and 7.

A newcomer to my columns is Bernard Terry VK4KAC, from Nambour. He sent log details for six metres. They have been summarised as follows: 29/11 YJ8UU; 7/12 VK3s CNX, AZY, XDR, KTO, HQ, AFW. 8/12 YJ8UU, VK7RAE/b. 15/12: VK2FV, YJ8UU, VK3SIX. 16/12 VK3YDE, repeaters on 53.975, 53.550, 53.575. 23/12 VKs 3ANP, 3DUQ, 3AZY, 3FGN, 7JR, 2BHO, 6RPH/b, 6YU, ZLs 2KT, 2WNB, 3SIX. 30/12 JA8QX. 1/1 VK4JH. 2/1 ZLTV 50.750. 8/1 VK3YDE. Many of the contacts were made in the morning between 2000 and 0100.

First US F2 contacts of Cycle 23

Last month I gave an outline of contacts made during the F2 opening to the US. Emil

Pocock W3EP in *The World Above 50 MHz* in QST gives a more complete picture as follows, covering 3/12 and 1/1. Times when known in brackets.

ZL2TPY: K6QXY (2342), K5LLL (0027), K5IUA (0028), W5UWB (0039), K5AAW, W5VY, N5BBO, N5TSP, K5WN (to 0041).

ZL3AAU: K5IUA (0034), W5UWB (0033).

ZL3ADT: K5IUA (0027), W5UWB (0033).

ZL3NW: K6QXY (2346), K6SIX (0033), K5IUA (0038), W5UWB (0041), K5LLL (0043).

ZL3TIC: W5UWB? (0045), K5IUA (0048), W5VY (0048), W7CI (0049), W5EU (0056), W6JKV/5? (0057).

ZL4KB: W5VY (0109).

VK2BA: K5IUA (0017), KI5GF.

In relation to the US opening, Steve VK3OT/KL supplies the following additional information: "WA6BYA said that ZL2TPY heard a large pileup of W5s and W4s on an XE2 station. He was forced to call WA6BYA who called a W4, who then worked ZL2TPY

"A W0 in North Dakota working W7s lost his first ZL QSO when he failed to respond to ZL2TPY trying to break in on his QSO. He was 5x9 in ZL2. Likewise, many W5s missed ZL as they tried to work the XE2.

"Most KL7s use and monitor 50.125 and there is no or little activity on 50.110 MHz."

By the way, Steve VK3OT/KL sent me a photograph of his thermometer which was registering -32 degrees C. Quite cool I should imagine!

JA1VOK Retires

Hatsuo Yoshida JA1VOK retired from writing *World VHF News* in the Japanese magazine *Five Nine*, effective with the December issue. He had been writing this column since October, 1987. He continues his informative VHF news from around the world in *V*UHF DX Topics*, which he has written for the Japanese *Mobil Ham* magazine since January 1989. A good portion of the column is in English, making it accessible to many VHFers around the world. ... W3EP and QST.

Using 50.200 MHz

David VK2BA writes: "It concerns me that there are numerous VKs who are not aware of the new 6 M band-plan and the 50.200 MHz calling frequency, continuing to call CQ on 50.110 looking for local (VK) DX. It would assist all operators if the word can be passed on to them that they will now do better calling on 50.200. As I observe it, the same stations are heard consistently on 50.110 and they QSY only a small amount

and talk to each other regularly. Everyone else has gone to 50.200 and is working up the band from 50.150 to at least 50.280 MHz.

"Those hovering around 50.110 seem unaware of the activity up the band. I am finding stations every day that are unaware of the new arrangements and are happy to be informed. Remember that every operator will benefit by having a clear international DX segment when it comes their turn to latch onto something exotic. What is the hang-up about moving up the band a little to where the activity is now?"

Edge of the Outback

Norm McMillan VK2XCI is an active operator from Mount Hope QF27wd, which is about 150 km south of Cobar. He refers to being 'The Edge of the Outback', e-mail njmcmillan@bigpond.com.

Norm participated in the recent VHF Field Day but, due to the hot conditions and many thunderstorms, he managed seven two metre contacts only. He reports: "I'm currently running an FT480R followed by a Communications Concepts amp giving about 75 watts and a VK5 pre-amp to a 13 element W Wulf beam. This is on a five metre aluminium mast mounted 10 metres up the old head-frame at the (abandoned) New Mount Hope Copper Mine and about 220 metres asl.

"If you want a sched I can usually manage early morning...say pre-dawn to 0830 local time, any day of the week, weather and domestic circumstances permitting."

Two Metres and Above

Scott Watson VK4JSR reports a two metre Es opening between VK4 and VK3 on 14/1 from 0820 to 0830. VK4s involved included VK2FZ/4 and VK4JSR. A number of VK3s were worked by VK2FZ/4, and VK3TDV worked by VK4JSR at S9.

The Ron VK3AFW report: "After poor conditions for the last week, 2 and 70 again open this morning 15/1 to Adelaide. VK5AKK 5x9 on 2, 5x4 on 70. He worked Des VK3CY at 2105 and myself at around 2140 plus several others."

Ron lists 400 km plus tropo contacts:

17/1: 2147 144.12 VK2TWR 5x6; 2149 432.15 VK2TWR 5x3; 2228 144.12 VK5AKK 5x3, 432.15 VK5AKK 5x2, VK7XR 1200-1300 VK3s, VK5NY, VK5AKK. 18/1: 1115 144.12 VK5AKK 5x4, 432.15 VK5AKK 5x1; 2208 144.18 VK2TWR 5x5; 2209 432.18 VK2TWR 5x3.

Aircraft enhancement contacts:

16/1: 2100-2200 1296 VK3DEM to VK1BG; VK3CY to VK2FLR.

17/1: 2155-2205 144.200 VK1DO 5x6, VK1BG 5x3, 432.150 VK1BG 5x1.

20/1: 2108 worked Richard VK2ERF at

Bungonia, 80 km north of Canberra. Signals were 5x6 and the band opening lasted about 4 minutes. 2145: worked Phil VK5AKK in Adelaide at 5x3 on 144.

Bob ZL3TY said good tropo conditions prevailed on 17/1. At 0110 148 MHz pagers in up to S9, nothing on 6 m Es; 0157 strong packet on 147.575, logged packets from VK2EHQ Kilnura, VK2AMW Wollongong, VK2XGJ Dapto and VK2XTH. Called on 144.1, no takers. Signals stayed up for two hours.

From Doug VK4OE: "On 30/12 there were contacts between VK4 and VK3 on 144 MHz Es. What was interesting this time was the 'stable patchiness' of it. The foot print at each end seemed to be well defined, and limited to relatively small parts of each state, at least as far as propagation between Brisbane and Melbourne was concerned.

"I (in Brisbane) worked only four stations, mostly west of Melbourne, while stations north of Brisbane (VK4IC and VK2FZ/4) worked significantly more VK3s mainly in the greater Melbourne area. At the same time, David VK2BA in Dorrigo, NSW, was able to work a couple of VK5s, obviously using the same patch or bubble of ionisation that we were using, but no other stations."

Tropo DX from Gordon VK2ZAB

17/1: 144 MHz SSB between 2108 and 2144: VK2BBF to ZLs 2VAL, 2TAL, 2TE, 1AKJ and 3TY; VK2ZAB to ZLs 2TAL, 2VAL and 2TE. Signals 5x1 to 5x6.

All on 18/1: 0030 to 0209 ZL1AVZ to VK2s BQJ, DXE, BBF, TZ, APG, FLR, ZAB. 0421 to 0516 ZL1AVO to VK2s BBF, TZ and DXE. Signals from 5x2 to 5x9. 432 MHz SSB 0047 to 0211: ZL1AVZ to VK2s BBF, BQJ and ZAB. Signals 5x4 to 5x7. 1296 MHz SSB: 0037 ZL1AVZ to VK2BQJ 5x5, 0235 ZL1AVZ to VK2ZAB 5x5.

Rick Kowalewski VK6XLR at Exmouth, reported 1100+ km SSB QSOs with Wally VK6KZ on 19/1 from 1415-1525 on 144.120 5x9, and at 1450-1456 on 432.120 5x3 with a homebrew eggbeater antenna at his QTH! On 20/1 1330-1430 VK6RPH/b 144.459 MHz.

Wally VK6KZ said that the distance to Exmouth is 1133 km. "I alerted David VK6AOM in Buntine that the 19/1 contact was on, but David could not hear any sign of Rick's signal on 144 or 432. Buntine is 240 km at 18 degrees from here. It would have been an overland path so his results reinforce importance of the nature of the land/sea interface.

"I went south from 25/12 to 31/12. Many contacts on 144 MHz, very few on 432 MHz and nil heard on 1296 MHz and on 10 GHz. Looked frequently for the VK5VF 1296 and 10 GHz beacons, and Trevor Niven VK5NC

went out several times and fired his TWT at me - but no joy. Looks like the central pressure may not have been high enough and the whole system was very elongated. Best 144 DX was to VK3TMP/p at Kilcunda approximately 100 km SE of Melbourne.

"Interesting observations by people over east about the comparisons of the Albany and Esperance beacons. The reports seem to indicate that if one is audible so is the other with the stronger one alternating between the two. In my case the Esperance beacon seemed to fall away when the path across the Bight on 144 MHz was good. Karl Hennig VK6XW, the beacon keeper at Albany, would appreciate reports of the value of the beacon. He pays personally for the power for the beacon and the Southern Electronics Group is grateful to Trevor Niven VK5NC and others who have paid for the licence.

"From Jurien Bay, during the Field Day on 10/1, contacts were had on 50, 144, 432 and 1296 MHz with Perth stations (approx 200 km) and 10 GHz to Geraldton as well as one on FM with VK6AFA 323 km south.

"The Perth 10 GHz beacon was audible at 5x9+ for at least seven hours prior to departure on Sunday 11/1. The Busselton and Perth beacons on 144, 432 and 1296 were audible over the 24 hour period with the 1296 MHz one from Busselton (374 km) being paralytic for much of the time. The usual conditions for such good propagation were present - namely the trailing edge of a north-south trough."

John VK3KWA sent the following two metre observations, by packet:

28/12: 2316 VK2BA-ZL3IU, also heard ZL1AKW.

0319 VK3BRZ-VK4LE.

30/12: 2050 VK5RSE S6 here. 2105 VK5DK-VK6WG, VK6KZ-VK5DK, VK3AFW.

2110 VK3UM-VK5PO, VK5EN.

2120 VK5EN, VK5AKK.

2136 VK3CY-VK6KZ.

2147 VK6WG.

31/12: 1020 VK6KZ-VK3TMP.

VK5RSE up to S8 all evening.

Nothing heard here from VK5VF or other beacons.

1335 VK6AS heard working someone called Steve.

01/01: 1120 144 and 432: VK7XR, VK7DC, VK7RAE/bm S9+20.

1296 to VK7XR, audible but no two-way.

South Africa on 70 MHz

The South African Telecommunications Regulatory Authority has assigned 70.000 to 70.0185 MHz to the South African Radio League (SARL) on a secondary basis for propagation studies, according to a recent

announcement from SARL. SARL is now accepting proposals from South African amateurs for operating 70 MHz beacons. It is not clear whether this will eventually lead to further privileges on the band. ... W3EP and QST.

Microwaves

Alan VK3XPD reports that Rob VK3DEM and Roger VK3XRS are now operational on 10 GHz. He had a 250 km QSO with them on 9/1. Andrew VK7XR and Brenton VK7JB are progressing slowly with their 10 GHz units.

From Wally VK6KZ: "On Saturday, 10 January 1998, Neil Sandford VK6BHT/p at Separation Point near Geraldton worked Walter Howse VK6KZ/p at Point Louise near Green Head (north of Perth) over a 143.1 km sea path on 24 GHz SSB. Conditions were not conducive to good propagation on that band with the temperature and humidity at each end of the path being 22 degrees Celsius and 98%. Reports of 3/1 each way on SSB were exchanged along with serial numbers for the Ross Hull/Field Day contests. There was severe QSB and maintenance of the five minute cycles described previously (Neil the even five minutes and Wally the odd five minutes) was vital to the contact.

"Signals from VK6BHT/p were initially heard at 1124 (19.24 local just after sunset) and the contact was completed between 1310 and 1323. Both stations were using about 20 mW to 570 mm diameter dishes (the path on 10 GHz was very solid). This contact will be claimed as a new Australian distance record, exceeding the previous one of 120 km. Attempts prior to this contact from Jurien Bay (a 172 km path) were unsuccessful on 24 GHz and also unsuccessful the following morning again from Jurien despite strong signals on 10 GHz.

"The end of an era. Amateur radio station VK6BHT has closed down. Neil flew out on Sunday, 18 January to find a new QTH in NSW. I worked him for the last time on 10 GHz on Monday 12/1 to give us our 20th home-to-home contact and 91st on 10 GHz. He will be missed!"

During the Field Day of 10-11/1, Doug VK4OE said: "There were three stations operating on 2403 MHz, each with about four watts transmitter output and low noise receiving pre-amplifiers. The Brisbane VHF Group operated VK41F/p at Mt Mee, about 30 km north west of Brisbane, Adrian VK2FZ/4 operated from his residence at Maleny 70 km north of Brisbane, and I operated from a high hill in the Herries Range near Stanthorpe about 150 km south west of Brisbane.

"During the Field Day period, regular

contacts were had on many occasions between each of us. Two years ago I had one very weak contact from my Stanthorpe site to Adrian's location (establishing the still-current Queensland distance record of 224.8 km for this band), using four watts at Adrian's end and one watt at the bottom of the coax at my end. This year I had my properly functioning mast-head box with four watts of power and a DJ9BV kit LNA in the receive path, with everything right at the feed-point of a pair of 45 element loop Yagis. Most times

the contacts were reliable at approximately 200 and 260 km range, over obstructed land paths (worse to VK4IF/P)."

On 25 October, Roy Emery G3FYX and Steve Davie G4KNZ, made a 65 km contact on 47 GHz from portable sites, for a new United Kingdom distance record for the band. Both stations used 100 mW Gunn diode transmitters and receive mixers with small dish antennas. Initial contacts were made on 24 GHz, just to align the antennas! ... W3EP and QST.

Closure

There has had to be considerable pruning of notes this month to fit in with space limitations. Please keep sending information and let me do the pruning!

Closing with two thoughts for the month:

1. The mark of a true executive is usually illegible, and
2. When indifferent, the eye takes still photographs; when interested, movies.

73 from *The Voice by the Lake*
ar

The WIA regrets to announce the recent passing of:-

HF (Hans) RUCKERT	VK2AOU
L O'CONNELL	VK2BFP
FK (Frederick Keith) TAPLEY	VK5FT
TA (Thomas A) ALLEN	VK7AL

Hans Fritz Ruckert VK2AOU

It is with great regret that I announce the passing of Hans Fritz Ruckert VK2AOU who died suddenly on 6 January 1998 in Sydney. He was 83 years old.

Hans was born in Posen in West Prussia, now Poznan in Poland. His interest in electronics goes back to his high-school years. He gave a talk to the class on radio, his physics teacher borrowed his books on electronics, and instead of his final physics exam, he wrote a 40 page paper on short wave receivers.

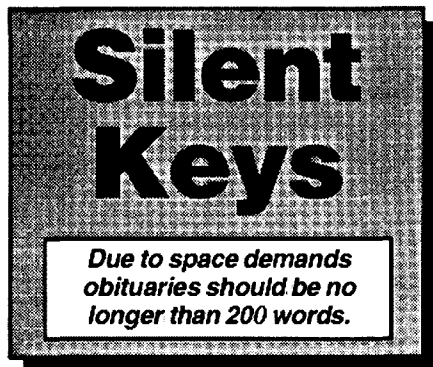
In 1936, after his compulsory army service, he passed his amateur radio receivers operators exam. After some practical work he studied at the Berlin Technical University at the electrical engineering faculty. Because he refused to join the SA, a paramilitary Nazi organisation, he was declared "politically unreliable" and barred from further university studies.

During a temporary job with the German electronic company Telefunken in 1939, he exhibited a 12 valve receiver, which he built himself, at the Berlin Radio and TV Fair.

At the outbreak of the war, he was immediately called up, served in a signals platoon, and was wounded in 1941. Afterwards he was permitted to continue his university studies. Later on he was transferred to the Technical Academy of the German Air Force in Berlin.

His radio amateur call after the war was DL1EZ. He was in regular contact with a Sydney radio amateur named Maurie Brown, who arranged his immigration to Australia via the Australian Ministry for Industrial Development. Hans left Germany with his wife Ilse in June 1951, aged 36, and travelled to Australia.

From 1951 to 1980 he worked for Ducon



Condenser, later Plessey Ducon. He was responsible for the development of ceramic dielectrics and the production of ceramic capacitors. He obtained a patent for his system of piezoelectric ceramics manufactured by Plessey and used in the OCTOSON Ultrasonic Scanner, BARRA Sonobuoys for anti-submarine defence, and a miniature hearing aid for children. All of these have become major export earners for Australia.

Hans also developed the VK2AOU tri-band radio ham aerial, which for a long time was better than any other aerial of its type. He published over 200 articles in local and overseas electronic magazines and presented papers at conferences in Australia and overseas.

He was involved with amateur radio for close on 67 years. He was a member of the WIA and was Federal EMC Co-ordinator from 1987 to 1994. He was a columnist for *Amateur Radio* on EMC and other related matters over many years. His passing left a permanent mark on the electronic world. Our deepest sympathy is extended to his surviving children Sigrid and Hardy, and their families.

Stephen Pall VK2PS

Ian Fraser Berwick VK3ALZ

Many readers will have been saddened by the passing of Ian Berwick VK3ALZ.

Ian lost his battle with cancer on 21 October 1997. First licensed in January 1952, Ian enjoyed many aspects of the hobby,

including contesting. His early successes included winning the Open Section of the 1959 RD contest and he was the first operator to win the Ross Hull Contest more than once, winning in 1956/57, 57/58 and 58/59. His latest success was winning the 1996 RD contest, HF section.

Ian became something of a legend, having been the first VK to span the Pacific on 6 m (to XE1FU in Mexico in 1959) and setting an Australian record on that band which stood for two decades.

Born on 28 June 28 1925 at Yea, Victoria, at an early age Ian was building and inventing gadgets. He was academically gifted, winning a scholarship to Melbourne High School. He later graduated with a diploma from the Forestry School at Creswick, and began work for the Forestry Commission. Unsuitable climatic conditions in some of his job locations and a love for radio caused Ian to find work at Essendon Airport servicing radios for firstly AWA and then NIC. However, his employer for 36 years was the Department of Supply (later the Department of Defence) where he worked designing and constructing electronic equipment for chemistry research.

At a mature age, motivated by interest in mathematical analysis and natural curiosity, Ian undertook a degree course in Electrical Engineering, graduating in 1977, from the Footscray Institute of Technology. After graduation he continued to work designing, building and operating test equipment as before. He was not interested in the managerial positions others might have aspired to.

The very first contact one of us (VK3AL) had was with Ian in 1955. At that time he was living in a tent on his block of land in Glenroy. Mains power had not been connected, so, with true amateur ingenuity, Ian operated his 2 m rig (2 watts AM to a 6J6) from a pedal-powered generator.

Ian was an inveterate experimenter and constructor who refused to buy anything he could make himself. He was also a dedicated

researcher and wrote many articles for *Amateur Radio* over forty years. His development of the long Quad (loop Yagi) broke new ground; however, much to his disappointment, his contribution was never acknowledged and the credit went to others.

His other long term interest was astronomy and many will remember his on-air descriptions of his experiences with grinding telescope mirrors.

Although an intensely private individual, Ian was an active and unselfish operator on all bands from 1.8 MHz to 2.4 GHz. His outstanding signal and friendly voice will be greatly missed. Ian is survived by his two sisters, Joan and Betty, his brother David, and many nephews, nieces, great-nephews and great-nieces.

Farewell Ian.

Eric VK3AX, Alan VK3AL, John VK3KWA, Ron VK3AFW.

Noel Leslie Martin VK4PQ

Noel Martin VK4PQ passed away at his home in Kawana Waters, Queensland, on 9 January 1998, at the age of 69. He was born in Dalby on 15 April 1928. At three years of age he contracted polio which left him without the use of his legs. His first job after leaving school was as a projectionist for the local movie theatres. He also installed public address systems at the show-grounds and for other functions. He studied and obtained his electrician's ticket, taught himself motor and refrigeration mechanics, and much more than the basics of engineering, and fitting and turning. Noel reconstructed a car to take hand controls and soon acquired a driving licence.

Noel's twenties and thirties were spent building up a reputable business on the Darling Downs. His leisure interests were photography, leather work, and competing in motorkhanas most of which he won. One of his main interests, however, was amateur radio which continued throughout his life.

Noel became interested in amateur radio while living at Bell, Queensland. He was tutored by Eric Nissen VK4XN and on 3 September 1952 was licensed as VK4PP. He took up the additional callsign VK4PQ on 29 June 1962 and held both calls concurrently until 8 December 1975 when, on official request, he relinquished VK4PP. Subsequently, his call VK4PQ came to be known world wide.

In the late sixties Noel moved to the Sunshine Coast and built in Kawana where he met and married Monika. He learned fibre-glassing and, together with Monika, built and repaired fibreglass boats, became involved in professional fishing and, in later years with Monika and daughter Katie, established a printing business.

Noel was a man with a disability but was

not disabled; he lived life to the fullest, and will be sadly missed by his family and many friends. He is survived by his wife Monika, daughter Katie and sisters Heather and Jan.

Ron Marschke VK4GZ

Malcolm Saw VK6SM

It is with profound regret that we record the death of Malcolm (Mal) Saw on 29 October 1997 after a brief illness.

Mal was born in West Perth on 16 April 1921. After primary schooling he commenced studies at the Perth Technical College with a leaning towards electrical engineering. On the outbreak of WW2, Mal entered the Army and later transferred to the RAAF, serving in several areas including Boulder, Darwin and New Guinea.

During his Boulder service he met Anne, who was serving in the WAAF, and they were married in Perth in 1945. They had two daughters, Margaret and Dianne.

On his discharge from the RAAF, Mal returned, undertook a four year course under the auspices of the Rehabilitation Scheme, and qualified in Electrical Engineering. Mal also qualified for the AOCIP and, in 1951, built the family home in the Perth suburb of Doubleview in a high position, providing an excellent QTH for amateur radio propagation. Mal's interest in amateur radio included HF DX operating in earlier years and, latterly, digital modes. He effectively used computing for this and also in his designing work.

Mal worked for several employers and then commenced his own consulting engineering business which he conducted from his home to the time of his death. Malcolm was involved in the electrical refurbishing of His Majesty's Theatre and, in later years, with design for retirement villages. He was working on an RSL village electrics design at the time he fell ill.

Mal was an active member of the Rotary Club of West Perth. His long service to the club and his sterling qualities were recognised by the granting of a Paul Harris Fellowship in 1987.

In 1986 Mal was involved in the formation of the Probus Club of Wembley. He was a continuing Committee member of that club.

A large number of friends, including Probus Club members and amateurs, attended the funeral to share with Anne and family in farewelling Malcolm. During the eulogy, Mal's life achievements and strength of character were mentioned and his devotion to his family was emphasised.

Those of us who knew Mal well are the better for having known him and will miss him. His many amateur friends join in expressing condolences to Anne and family.

Frank Taylor VK6JK

Tommy Price VK6TP

Tommy (he preferred the more informal style of address) passed away on Boxing Day 1997 aged 86 after a period of ill health. He is survived by his wife Margaret, daughter Melanie, son-in-law Paul and grandchildren Simon, Felicity and Sebastian.

Born in the UK, Tommy was known to a far wider public for his exploits in competition motorcycling than amateur radio. His reputation on the cinder track was established in the pre-war years and continued into the post war era. Before migrating to Australia, he became interested in our hobby and worked for some years with the call G3KDH.

Sadly, his retirement in a new land coincided with the poorest HF conditions for several years and, despite excellent equipment and keen monitoring, QSOs with long-time friends in the UK weren't as good or as frequent as he had hoped for. Another of his interests was lathe work at which he showed great skill.

Nice to have known you, Tommy!

Harry Atkinson VK6WZ

Thomas A Allen VK7AL

It is with regret we record the passing of Tom Allen VK7AL on 25 January 1998 after courageously coping with a terminal illness.

Tom was elected a Life Member of the Institute in 1966 in recognition of his outstanding service to the Tasmanian Division of the WIA and the Institute in general. He occupied several positions in the Southern Branch and the VK7 Division, being Divisional President over eight years.

Tom served in an Army Brigade Electronics Workshop in New Guinea during WW2 with the rank of Sergeant Major/Warrant Officer Class 2. After the war he joined the Army Reserve and rose to the rank of Captain. Through this association, Tom acquired a military bearing, and power of command, which, when required made him a most worthy representative of the Institute during formal occasions.

When I first met Tom, he was employed by a then well known electrical retailer, Laurence and Hanson. Later he branched out on his own, representing Siemens in Tasmania. Tom was finally employed by the Health Department, maintaining X-ray and other medical equipment throughout the State.

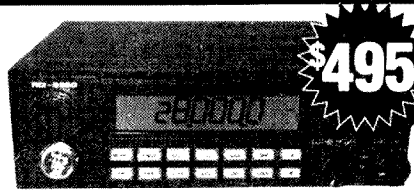
Tom is survived by his wife Evelyn and two daughters, Kathryn and Margaret.

Tom's many friends join in expressing their sincere condolences to his wife and family.

E A Beard VK7EB

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Over To You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Morse Code - When Help is Needed

Telegraphy is dying - superfluous to our needs. Soon even the aircraft beacons and marine buoys that use Morse code to identify themselves will be replaced.

However, from what I've been reading in the press for the past few months I am having second thoughts about its necessity. A radio amateur in North Wales, UK, in intensive care, near paralysed, was able to communicate with his wife sending Morse code with his toes. His wife had learnt the code in the Girl Guides.

A former Signals Officer in Australia, paralysed with the Guillain-Barre syndrome, was able to communicate using twitching movements of the eye lids. A similar incident was described with an ex-Merchant Navy Radio Officer who had the syndrome in England.

Perhaps we should keep Morse Code in the licence, if only for medical reasons. Who can send digital signals with their eye-lids? Especially in Hex!

I wondered if any members of the Amateur Fraternity had, or know of, any similar medical incidents where Morse Code was prominent as the communication medium?

David A Pilley VK2AYD

41 Cain Close, King Creek NSW 2446

davpil@midcoast.com.au

Amateur Web Pages

Like so many amateurs these days who have access to the Internet I created a home page <http://www.albury.net.au/~lorian> based around my hobby with links to other larger amateur radio sites. Surprisingly enough it manages about two to five hits a week and that's in a small country area. Imagine how much could be done in the city.

Like so much of the Internet it is a great advertising medium. Many providers will allow a certain amount for a home page free of cost so I would encourage everyone who has the opportunity to create a home page on their local provider.

There are already some great sites about. Just type Ballarat or Bendigo into a search engine and the local radio clubs are right up front. It's great to see them there. Following on from this I would like to suggest that the call

book incorporate e-mail addresses alongside call signs.

Ian Glanville VK3AQU

6 Leggio Road, Myrtleford VIC 373

e-mail: lorian@albury.net.au

The Real Murphy

I am the lucky prize winner of a "Fluke" Digital Multimeter. I write to express my appreciation to the Wireless Institute of Australia for the terrific prize.

You will note that my surname is Murphy. I am trusting that the multimeter will be "Murphy-proof". Over the years I have purchased and used various cheap meters and they have all suffered a similar fate. "Murphy strikes again!"

One of my Ham friends has suggested that I will need to get in a D7 bulldozer to make room for the new meter on the shack bench. I deny this rude remark! It should only require something smaller like a Bobcat.

Thank you again for a wonderful prize.

Neil Murphy VK2GAN

"Auro"

Bean Creek, Old Bonalbo NSW 2469

Hope for Amateur Radio Future

Like many amateurs I have been concerned at the direction, or lack of, that our fine hobby seems to be taking. However, after reading *Amateur Radio* for February, I now feel a glimmer of hope

The items I refer to are the *Revival of LF Band Allocation Submission* by the WIA and the letter regarding Morse Speed by VK2AZW.

I strongly support the allocation of a band between 100 and 200 kHz for the use of amateurs. This I believe would rekindle interest in experimentation and home construction.

We could even see magazines like *Electronics Australia* again publishing amateur radio projects. How many people remember the 2JU transmitters and receivers from *Radio and Hobbies*?

As for the proposal by VK2AZW that the Morse speed for a full call licence be reduced to five words per minute, I believe this to be the most sensible compromise to the retention of Morse debate. To those who say "I had to pass 10 words per minute so everybody else should" I would remind them that once the required speed was 14 words per minute, so this would not be the first time speed has been reduced.

If these two proposals were implemented I strongly believe it would provide a greatly needed boost to our line hobby.

Mike Ide VK3KTO

"Thimbles"

94 Rutherford Parade

Warneet VIC 3980

ar

WIA Divisions

VK2 Notes

Elections

This year's elections for the VK2 Divisional Council will be just as important as in previous years, especially so this year, in that there are many projects that must be continued with the same effective momentum. Choose carefully, because whoever you vote for will be your representatives for the next 12 months.

1998 Annual General Meeting

The date set for the AGM is 18 April, 1998 at Amateur Radio House, Parramatta. It will commence at 1100 local. Nominations for Council and Motions on Notice are to be lodged no later than 12 Noon on 7 March, 1998. Late lodgements will not be accepted. Ballot papers and the annual report will be forwarded to members as soon as possible after this date. Completed ballot papers should be returned to the Parramatta office using the reply paid envelope to arrive no later than last post Friday, 17 April 1998. They will then be counted and the returning officer will announce the results at the AGM on the next day. Please note that it is very important that the instructions forwarded with the ballot papers and the proxy forms are strictly followed, otherwise your vote could be informal. Council nomination forms are available from the divisional office at Parramatta. The AGM starts at 1100 local on the Saturday at Amateur Radio House in Parramatta.

Year 2000 Committee Formed

It is very pleasing to be able to report that the Year 2000 Committee has been formed. I presided over its first meeting at Amateur Radio House at Parramatta on Saturday, 7 February 1998. It was a very enthusiastic gathering, discussing many ideas and ways in which amateur radio would be ready for the Year 2000 Olympic Games in Sydney. Of course it is virtually impossible here to pass on all the details, but be assured that over the coming months, if re-elected to Council, I will introduce you to the Committee and tell

you of some of the plans, aims and objectives and achievements as they are completed.

Allow me to assure you that preparation for the Year 2000 Olympics is an ongoing project and that the Committee comprises some very talented people possessing knowledge and expertise in many varied areas. On behalf of the Councillors of the WIA, VK2 Division, I thank those on the Committee for giving their time and efforts in aid of what will be a long term project.

On the subject of committees, it would be a good time for me to mention that there are many people who, under the auspices of the WIA and right throughout the amateur community, serve on committees. These dedicated people provide unpaid voluntary labour and plenty of it, to make sure WIA members and the amateur population generally receives essential services, such as repeaters, representation to the authorities, educational services, the formulation of Policy and Strategy and the technical know how. Basically these people decide what has to be done and then go and do it. To all those and others, thank you a thousand times.

Happy Birthday Wagga Amateur Radio Club

The VK2 Division heartily congratulates the Wagga Club on its 500th net held on Tuesday, 27 January 1998. It is also the club's 30th birthday this year. Secretary Eric Fossey VK2EFY dropped in on the night and said just what I have printed here, or words to that effect.

Central Coast Field Day

The VK2 Division attended the Central Coast Field Day at the Wyong Racecourse with a bookstall and deceased estates stall. This was an ideal opportunity for people to catch up with their friends and many had a chat with those Councillors of the Division who attended. There was quite a good roll up of Councillors on the day and, as they say in the classics, a good time was had by all.

Membership Renewals

Just a reminder that all VK2 WIA membership renewals are being processed through the Divisional Office at Parramatta. Anyone who has received a renewal notice, but has not yet responded, should forward the notice along with their fee to the VK2 Divisional office of the Wireless Institute at PO Box 1066, Parramatta NSW 2124. Do not send it to the Federal Office. According to Secretary Eric, in 1997 the NSW Division accepted more than 50 percent of the total new membership of the WIA nation-wide.

Correspondence Course

The VK2 Novice Correspondence Course is now available. For more information contact the Parramatta Office. It is a great

way to achieve a positive result and gain your amateur radio callsign. There will shortly be a bridging course to take you to the AOC (full-call).

Next Council Meeting

The next meeting of the VK2 Councillors will take place on Friday, 13 March at Amateur Radio House at Parramatta commencing at 7.00 p.m. The April Council meeting will be held on the first Friday of the month, which will be 3 April. This is due to the fact that 10 April, the second Friday, is Good Friday.

For more information, contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor, just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page. If you are addressing email to the office, please do so at vk2wi@ozemail.com.au. There'll be more to report next month, but if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777 or by email to dthom@penrithcity.nsw.gov.au

David Thompson VK2NH

VK3 Notes

Office Update

After five years operation from the Victory Boulevard, Ashburton office, it was time to review the way things are done and the available office equipment resources. During the Christmas/New Year holiday period when the doors of the office were closed, considerable updating of computer equipment took place to make way for improved member services in 1998 and beyond. And in answer to an obvious question, yes, we have also taken the opportunity to ensure that the computer software in use is Millennium or k2 bug free!.

In another "sign of the times", Australia Post has advised that its mail delivery and receiving services have been relocated from Ashburton to the Burwood post office. It is unclear at this time what impact this will have on the office, but the extra distance involved for parcel and mail bag handling is certain to add to mail delivery times.

Monthly Broadcast

The broadcast facility site at Lyndhurst, which served us well for many years, has been closed after the land owned by the government department was sold late last year. WIA Victoria is now negotiating for another site and is hopeful of re-locating VK3BWI to a new home soon. The broadcast, on the first Sunday of each month,

is to be heard on two metre and 70 centimetre repeaters direct from the studio, and relayed on 40 and 80 metres.

The VHF/UHF transmission equipment, audio panel and amplifiers have been updated and early testing showed it performing up to broadcast quality standards.

Disposals Transceivers

WIA Victoria has obtained a large quantity of Philips FM92 transceivers. These are fully synthesised FM mobile sets with scanning facilities, ideal for conversion to the two metre band. The frequency control is an EPROM which needs to be reprogrammed to the buyer's choice of channels and scanning requirements.

The cost to WIA members is between \$20 and \$40. We cannot arrange freight for buyers but, in line with our long standing policy, country members can buy and reserve a FM92 transceiver which will be held according to pick-up arrangements.

Internet Homepage

The WIA Victoria homepage is under continued development. Among the latest additions is WIA Victoria news broadcast highlights and WIA Federal news. Historic and feature material is being placed progressively; thank you to those members who responded to an earlier request in the VK3 Notes column for ideas and contributions.

The homepage www.tbsa.com.au/~wiavic is playing a key role in attracting new members, both prospective radio amateurs and those who already hold a callsign.

Repeater Licences

It was very pleasing to see that the initial impasse over repeater and beacon licence fees was resolved through negotiation between the WIA and the Australian Communications Authority.

Concern about the level of fees and complexity of licence arrangements was felt throughout Australia, and WIA Victoria shared many of the concerns because it pays the licence fees for an extensive network of repeaters.

After little positive progress on the issue, WIA Victoria sent a representative to Canberra at the expressed invitation of ACA officials. The outcome of the amiable discussions and negotiations that flowed from that meeting resulted in resolution of the repeater and beacon licence fees issue for all of Australia, and earned WIA Victoria the heart-felt thanks of many repeater licensees around the nation.

Finances on Track

The annual audit of WIA Victoria's finances which covered the 12 months ended

December 1997, confirmed the completion of another successful financial year. Further information will be included in the annual reports sent to all members in May.

Jim Linton VK3PC

VK5 and VK8 Notes

The following notes include material taken from scripts of recent VK5WI Sunday morning broadcasts. Many members do not hear these broadcasts or see the notes provided via packet radio. I feel this information is relevant and should help members understand how it is provided.

Our "South Australian" Astronaut

Please excuse a little bit of parochialism.

I received a query regarding claiming Andy Thomas VK5MIR/KD5CHF as an "Australian". My correspondent pointed out that Andy had taken up American citizenship. However, the laws have changed and I can assure you that when I met Andy he was most pleased and proud of the fact that he had been able to regain his Australian citizenship. I thus have no hesitation in claiming him as ours.

The Adelaide media are intrigued that we have our own astronaut. Numerous telephone calls have requested additional information.

Meantime, several VK5 stations are looking for signals on an opportunity basis just in case someone decides to make a call on the amateur radio gear. When someone contacts MIR we will soon hear about it. The relief crew which has joined the station is comprised of Russian cosmonauts who have been up there previously and who are known to enjoy their amateur radio contacts when time allows such activity.

The word I have from the Johnson Space Centre is that it could be mid February before anything much happens along these lines.

Membership and Public Relations

I have been able to make comment about amateur radio on several occasions in "on air" broadcasts over commercial and ABC radio broadcasting stations as well as in Sydney newspapers. Some of this was linked to United Kingdom statements that their maritime safety organisation would no longer be using Morse Code as a means of communication for emergency purposes. The story regarding Andy Thomas also played a part.

Consequently, I was asked to attend the ABC studios here in Adelaide where I was given the opportunity to talk with one of the presenters for 10 minutes or more on amateur radio in general. We covered a great deal of

ground and showed how wide-ranging amateur radio actually is.

As a result of this publicity I received a number of queries as to how people can take up amateur radio. In each case I have provided them with more information, especially the fact it is a hobby for almost everybody. I have directed them to our Education Officer and Membership Secretary, Tony VK5WC, for additional information on getting started.

It is interesting to see how one thing leads to another. We can do ourselves a service and also help other people at the same time. Can you play a part in helping to swell our ranks by telling others about our hobby? As well as encouraging people to take an interest in amateur radio you can also encourage other operators to become members of the Wireless Institute of Australia.

There are obvious benefits in having a strong organisation and strength comes from numbers. That we can have influence was demonstrated by the effective lobby of Federal politicians by the Australian amateurs regarding increased amateur radio licence fees.

Our influence was not only with Federal Parliamentarians, but many other influential people. This included the various state branches of the RSL, as well as its Federal body, placing amateur radio on the agenda for their Federal convention in Canberra. Obviously, the amateur radio operators of Australia can have a strong influence in the community if they put their minds to it.

Imagine just how much more influence is possible if our efforts are channelled through the WIA.

Information to Members

Some effort is required to keep up the flow of information to members, but this is an important part of the Division's functions. Questions were asked at the January General Meeting as to how members are informed. Regular notes are provided for the Sunday morning broadcasts.

The script of the President's Notes section of the broadcast is provided Australia-wide on the Packet Radio Network. Each monthly issue of *Amateur Radio* usually carries Divisional Notes. These notes also attempt to convey to readers of all Divisions the activities, attitudes and opinions occurring in the VK5/VK8 Division. Periodically, additional notes appear in *Amateur Radio* magazine when news emanating from the VK5 Division warrants separate attention.

The *South Australian Divisional Journal* is published bi-monthly. A copy is provided to all Divisional members as an insert to *Amateur Radio* magazine. Where members do not receive *Amateur Radio* magazine a

copy of the *Journal* is mailed to them directly.

Not mentioned at the meeting was the fact that there is a Divisional "Web Page" available on the Internet. The latest report to Council on this aspect indicated that matters were well in hand to update the Web page.

Action is also in hand to provide copies of meeting minutes to Member Clubs outside the metropolitan area.

An open invitation has been given and reiterated from time to time to the effect that members are always welcome to come along to the Divisional Council meetings as observers. These meetings are held at the Headquarters building on the THIRD Tuesday of each month. The Council is always willing to accommodate any reasonable requests you may have and also to allow members, within reason, to address the Council if they so desire.

All members of Council are available to you for discussion. I have provided my telephone number frequently and indicated that queries are welcome. I can be contacted by telephone on either 08 8250 1708 or 08 8250 7712.

I welcome suggestions aimed at improving communication with members.

Finally, more members within the metropolitan area should be able to attend the monthly Divisional meetings. Attendances do not indicate an overwhelming amount of support for the Division. I am aware of some of the reasons for this and these are being addressed wherever Council can do so. Apathy may be a factor.

Ian Hunt VK5QX

VK6 Notes

Back Again

I enjoyed my five weeks in GM land (Scotland) in spite of the cold, but I am sorry to have missed out on the Ross Hull VHF/UHF activity. However, I may not have missed out on any really great openings, as I have been told that propagation has been a bit ordinary considering the time of year.

It was interesting to experience operating conditions in the UK, which I was able to do on HF with equipment borrowed from new friends – it is true about amateur radio being a "fraternity", friends are quickly and easily made after initial on-air contacts. The good news is that there are plenty of people to talk to on all bands, almost regardless of the time of day; but the bad news is the tremendous QRM caused by high powered Europeans, to the extent that I found the 80 m and 40 m bands virtually abandoned by the Gs at night. On VHF, I experienced good propagation via

knife-edge refraction, being able to work into the Inverness repeater on the East Coast from the Isle of Skye on the west coast, across vast snow-capped mountain ranges, on just 20 watts and a 1/4 wave ground plane antenna 12 feet high. Locals regularly use aurora (the "Northern Lights") to make interesting long distance contacts into Norway and Northern Europe. Scanning was also very interesting with a lot of VHF activity, which included several real-life dramas at sea.

Well, as I am really just back and have been unable to contact many potential contributors to the column, I have resorted to briefly summarising the latest minutes from the Division; hope to provide something more interesting next time!

From the Minutes

Minutes of Council Meeting 3 February 1998

(A) Agenda Items for the May Federal Convention

1. The matter of Nominations for the positions of Federal President and Directors, and VK6 nominations for various Federal Co-ordinators were discussed.

2. Draft motions concerning the WIA Strategic Plan, a proposal to appoint a part time Chief Executive Officer in Federal Office, and a review of the Magazine and Federal Office components of the Annual Subscription, were tabled.

3. Various other matters were discussed/actioned as follows;

(a) The topics of Limited Novice licensee access to SSB parts of the VHF bands, and the matter of seeking primary segments in the UHF/SHF bands;

(b) Possible management of membership records by Division; and

(c) A possible WIA cash contribution towards the running of the International ARDF Championships to be held in the year 2000.

(B) General Items

1. The forthcoming Conference of Clubs was discussed. A highlight was that the local ACA Area Manager had accepted an invitation to attend for lunch and to address the gathering. Various tasks were also allocated.

2. Late reimbursement of the VK6 component of fees.

3. The proposed HF Gateway licence application.

4. The relay of the "Newline" service was discussed. It was proposed that "Newline" will be transmitted on the 6700 repeater and associated network from 1015 to about 1030 WA time each Sunday.

5. The topic of the future of monthly General Meetings was deferred.

6. HF beacon antenna maintenance.

(C) Other Business

1. Peter Barrett VK6PEC, was welcomed as a member of the Division.

2. The "jamming" of a car security system was reported, as an example of the possible effects of using the 70 cm band for such devices.

3. It was reported that there had been 2250 "Hits" on the Division's WWW Internet site.

4. Concern was expressed about the validity of current insurance for tower climbing operations.

WARG Technical Meeting, 2/2/98

This meeting was held in the new (recently built) RSL building to evaluate it as a possible future venue, and terms were discussed with the RSL Management. If ratified by the committee, the new address for meetings would then be RSL Hall, Ramsden St. Victoria Park.

1. It was noted that the production of the newsletter was now due, and Mcl VK6TVA volunteered to produce the newsletter up to the final proof. The intention was to mail the finished article to members in time for committee nominations for the AGM which was 4 May.

2. Other items discussed and actioned were: Quarry (Ch 6800) passes, reimburseable payments, ACA Repeater License payments (total \$683 approved), and general correspondence, including letters to Busselton, Worksafe and Insurance Co.

3. A letter was received from the NCRG, seeking WARG support of their application to Wanneroo Council for the siting of the club's VK6RNC repeater at the Council's Two way radio tower at Yanchep. "*We endorse the siting of this Amateur repeater in Yanchep which would become a valuable asset serving Amateurs in the North of the Metropolitan Area*" – to be actioned by the Secretary.

In closing, we would hope to bring you a full report from the recently held "Conference of Clubs" inaugural meeting, in the April issue. And, as always, any local news or event details that anyone can provide will be especially appreciated.

Notice of Annual General Meeting

It is hereby notified that the Annual General Meeting of the Wireless Institute of Australia (Western Australian Division Inc) will be held on Tuesday, 28 April 1998 following the General Meeting which commences at 8 pm.

The meeting will be held in the Board Room, 3rd Floor, CWA House, 1174 Hay Street, West Perth.

The agenda will be:

1. Consideration of the Council's annual report.
2. Consideration of the financial report.
3. Consideration of other reports.
4. Election of office-bearers (President, Vice President and seven other Councillors).
5. Election of two Auditors.
6. Appointment of a Patron.
7. General business which has been duly notified.

Notices of Motion for the AGM must be received by the Secretary not less than 42 days prior to the meeting (ie by 17 March 1998), and must be signed by at least three members. The Secretary's postal address is: PO Box 10, West Perth WA 6872.

Nominations of candidates for election to Council must be received by the Secretary, in writing, not less than 42 days prior to the meeting (ie by 17 March 1998), with an intimation that the candidate is willing to act.

A candidate may submit a statement, not exceeding 200 words, outlining his or her experience and case for election. Each nomination shall be signed by two members proposing the candidate. Candidates must possess a current licence.

Any financial member who is entitled to vote may appoint a proxy, who must also be a financial member who is entitled to vote, to speak and vote on his or her behalf. Written notice of such proxy must be received by the Secretary prior to the meeting, and be in the following form:

I (full name), a member of the Institute, hereby appoint (full name), also a member of the Institute, to act for me as my proxy, and in my name do all things which I myself being present could do at the meeting of the Institute held on the 28th April 1998.

Signed:

Witness:

Date:

Contact Info

If you have anything coming up that you wish to put the word out on, please contact Chris on e-mail at vk6kch@amsat.org; packet at VK6KCH@VK6BBR.#PER.#WA.AUS.OC; or me, Chris Lowe VK6BIK on e-mail at chrismor@avon.net.au or PO Box 838 Toodyay, WA 6566; or 08 9574 4060.

Chris Lowe VK6BIK

"QRM" News from the Tasmanian Division

The preparations for the Divisional AGM are coming together and we are now expecting a bumper attendance, especially since it was announced that there is going to

a wonderful door prize offered at the evening dinner. Yes, that's right! An Icom IC-T8A tri-band (2 m, 6 m and 70 cm) handheld transceiver will be in the hands of some lucky licensed amateur present at the evening's festivities. Our sincere thanks go to Marcom-Watson and Icom for donating this wonderful prize. Have you planned yet to come along? It's not too late to attend. Let the Northern Branch secretary know NOW that you will be there.

The Divisional Annual General Meeting will be held on Saturday, 21 March at the Northern campus of the University of Tasmania at Newnham. The meeting is scheduled for 1400 hours and, after the business of the meeting is concluded, we will have an address from our guest speaker, Mr Peter Stackpole VK1RX, Executive Manager, Customer Services Division, Australian Communications Authority in Canberra. His talk in the afternoon session will be specifically related to amateur radio.

There is also going to be a trade table available for that pre-loved gear from 11 am, plus there will be trade displays (some of them hopefully operational) from 12 noon.

Have you recently constructed some homebrew equipment? Well there is also a competition for the best constructed and presented piece of homebrew equipment.

Wait! There's more! Yes, there will be a Fluke multimeter, donated by Dick Smith Electronics as a prize for the best homebrew on show!

Whilst the AGM is in progress, there will also be a craft demonstration nearby for YLs, XYLs and harmonics.

In the evening we will gather at 1800 hours for pre-dinner drinks. There will be a dinner at the University Cafeteria. It will be a bistro meal where you can choose what food and drinks you want and pay for it. The range is top class, I am assured.

Then you can dance the night away. The well-known local group "Bounty" has been booked and it has an active ham in its line-up. The prizes will be drawn later on and our guest speaker, Mr Peter Stackpole from the ACA, will give an address. So plan to attend NOW! Yes, I know it is on the weekend of the John Moyle Field Day, but we didn't plan it that way.

By now all amateurs in the State will have been circularised about the Division's activities and made aware of several pressing concerns, particularly repeater funding. This publicity campaign is to introduce the WIA to all amateurs in VK7, not all of whom are currently members. Details of the AGM and dinner, plus other Divisional news, will also be included. We would ask you to promptly send in the questionnaires as it will help the

Division plan their future activities which will benefit all amateurs in this State.

It is with deep regret and sadness that we announce the passing of Tom Allen VK7AL, past Divisional President and Life Member of this Division. I first came into contact with him when I was in Hobart in 1967 and Tom was then Divisional President.

Our condolences are extended to his widow and daughters. His cheery voice will certainly be missed from the airwaves. Vale VK7AL.

The North and North-western Branches will be having their annual combined meeting at Deloraine on Tuesday, 10 March at the Anglican Parish Hall. This time, guest speakers will be provided by the North-western branch. I warn you now to expect a shocking time. I only hope that someone has the foresight to warn the nearby Police Station when the sparks fly!

The Southern Branch meets on Wednesday, 4 March at the Domain Activity Centre. The North-western Branch will be holding their annual BBQ at Legion Park, Ulverstone on Saturday, 7 March from 1100 hours.

Don't forget the AGM and dinner with the fabulous door prize on 21 March. See you there!

Robin L Harwood VK7RH

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ACA Changes Address in Melbourne

The ACA (Australian Communications Authority) **Melbourne Central Office** changed their Melbourne address on 2 February 1998 to: Level 13, 200 Queen Street, Melbourne (corner Little Bourke Street). The new telephone number is 03 9963 6800 and the new fax number is 03 9963 6899. The new postal address is: PO Box 13112, Law Courts, Melbourne VIC 8010.

By mid to late March 1998, the **ACA Area Office** in Melbourne will have moved to Level 15, 200 Queen Street, Melbourne (corner Little Bourke Street). The new telephone number will be 03 9963 6988 and the new fax number will be 03 9963 6989. The new postal address will be: PO Box 13120, Law Courts, Melbourne VIC 8010.

Club News

See you at the 50th Urunga Radio convention on the Easter weekend!

B J Slarke VK2ZCQ

Northern Corridor Radio Group CQ World Wide CW Contest

Phil N6ZZ travelled to Perth, Zone 29, for the 1997 CQ World Wide CW Contest. Using a reciprocal licence, VK6BAT, he operated for almost the entire 48 hour period of the contest as a single-operator, multi-band entrant.

Phil set what appears to be a record for VK6 in the CQ Contest of 3845 contacts!

Using the club station of the Northern Corridor Radio Group, VK6AN, with accommodation, transport and sustenance provided by club members, Phil achieved Zone 29 worked in the contest. His aim is to work through all 40 Zones for the contest – he is now nearing the half-way mark.

“Let’s Communicate 97”

Nearly 500 people attended the NCRG “Let’s Communicate 97” event on 2 November 1997. Held in Perth each year, this event is Perth’s biggest amateur gathering.

The first prize of an Icom IC-D1A was won by Kevin Roach VK6TKR. Icom Australia’s Yoji Hashimoto VK3FIC and Duncan Baxter VK3LZ travelled across from Melbourne for the event.

Neil Penfold VK6NE



Meg and Alf VK2UG, and Peter VK2PA (now SK) and Ina at the 1997 Urunga Radio Convention. Peter was the foundation secretary of the first Urunga Convention. Alf was at the first Convention in 1949 and is one of the few amateurs at that Convention who is still an active amateur.

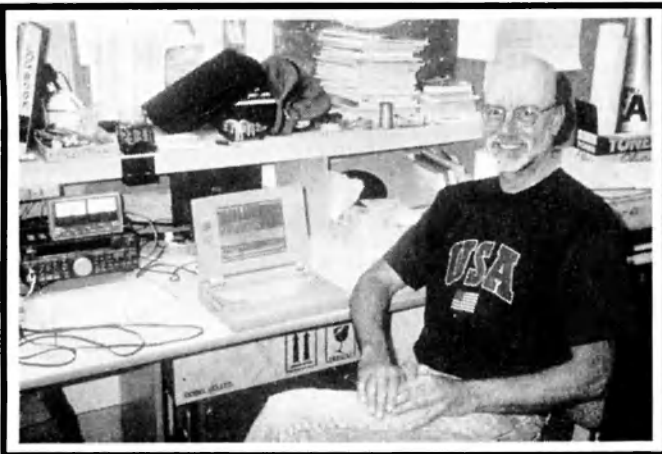
50th Urunga Radio Convention

The 50th Radio Convention will be held at Urunga on the Easter weekend of 11-12 April 1998. This Convention is the first and longest running amateur radio Convention in Australia. Also, Urunga could well be called the Fox Hunt Capital of Australia.

The Convention was started by a chance suggestion by Crieff VK2XO to Peter VK2PA, Col Fletcher VK2ASF and Doug Gill VK2SH, while they were all on an oyster punt being transported across a lagoon to Point Plummer to participate in that year’s Remembrance Day Contest.

As a result, the group gathered together

with a number of other interested hams from the area at the DO-ME boat shed. They spent the Easter weekend together and so was born the Urunga Radio Convention. There were too many to sleep in the one boat shed so the shed next door, owned by the McWilliams family of wine fame, was also used to bed the sober and not so sober gathering – the second boat shed was called DO-ME 2.



Phil N6ZZ operated as VK6BAT from the Northern Corridor Radio Group station VK6AN during the 1997 CQ World Wide CW Contest.



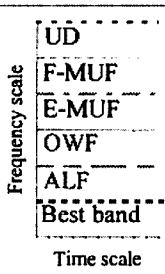
The WIA Bookshop stall at “Let’s Communicate 97” did a roaring trade.

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HF Predictions

Evan Jarman VK3ANI

T Index: 57



These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication.

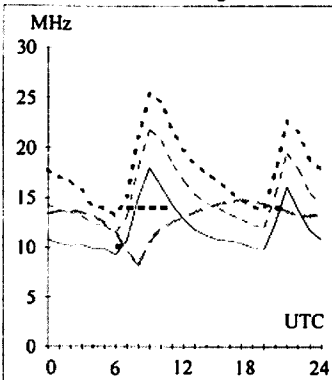
The frequencies, identified in the legend, are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

The predictions were made with the Ionospheric Prediction Service program, ASAPS V3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

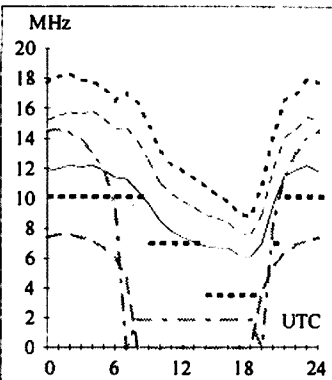
Adelaide-London 132

First F 0-5 Long 23755 km



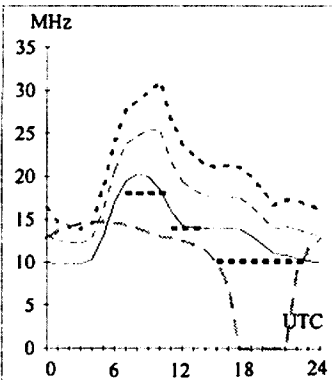
Brisbane-Christchurch 141

Second 2F18-23 2E5 Short 2517 km



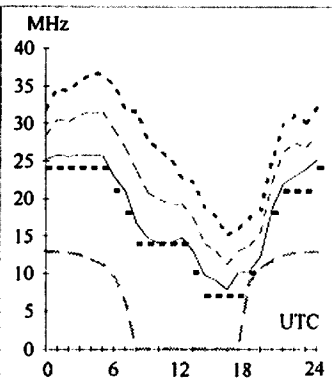
Adelaide-London 312

First F 0-5 Short 16269 km



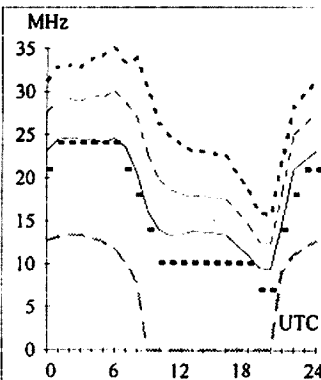
Brisbane-Honolulu 49

Second 3F5-11 3E0 Short 7569 km



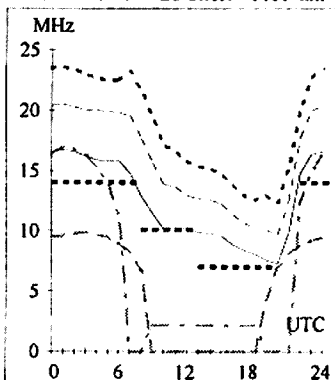
Canberra-Tokyo 352

Second 3F4-9 3E0 Short 7948 km



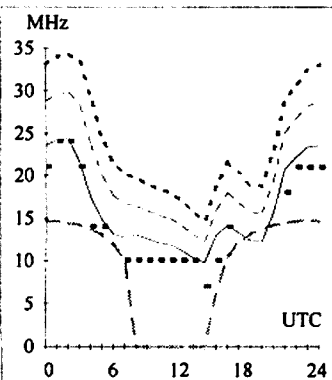
Darwin-Auckland 130

Second 3F12-16 3E2 Short 5135 km



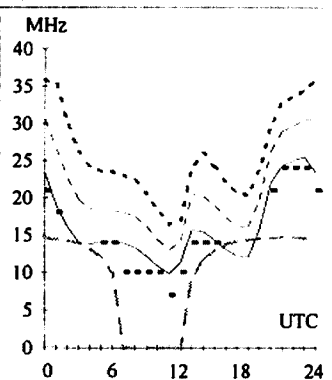
Adelaide-Los Angeles 66

First F 0-5 Short 13158 km



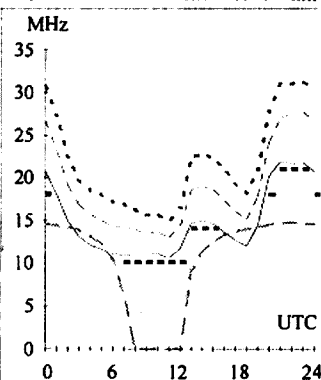
Brisbane-Miami 79

First F 0-5 Short 14759 km



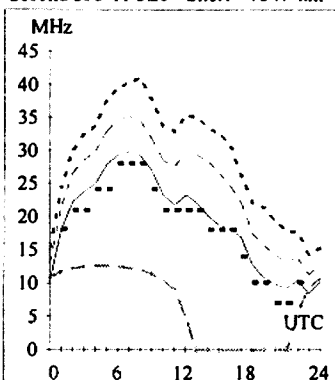
Canberra-Washington 70

First F 0-5 Short 15939 km



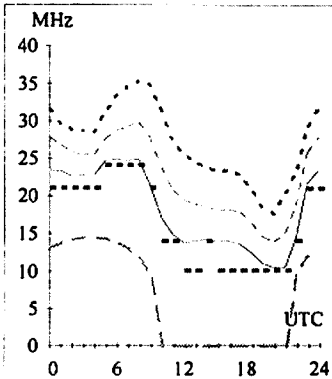
Darwin-New Delhi 309

Second 3F5-11 3E0 Short 7347 km



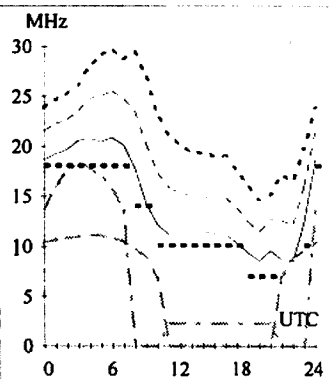
Adelaide-Manila 338

First 2F3-8 2E0 Short 5813 km



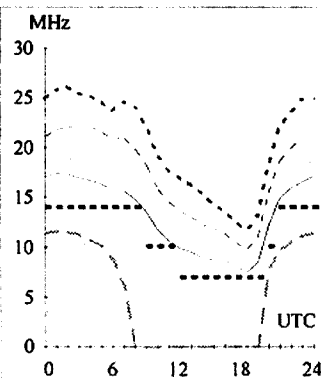
Brisbane-Singapore 293

Second 3F9-13 3E0 Short 6147 km



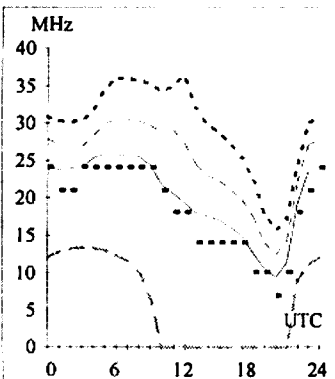
Canberra-Wellington 114

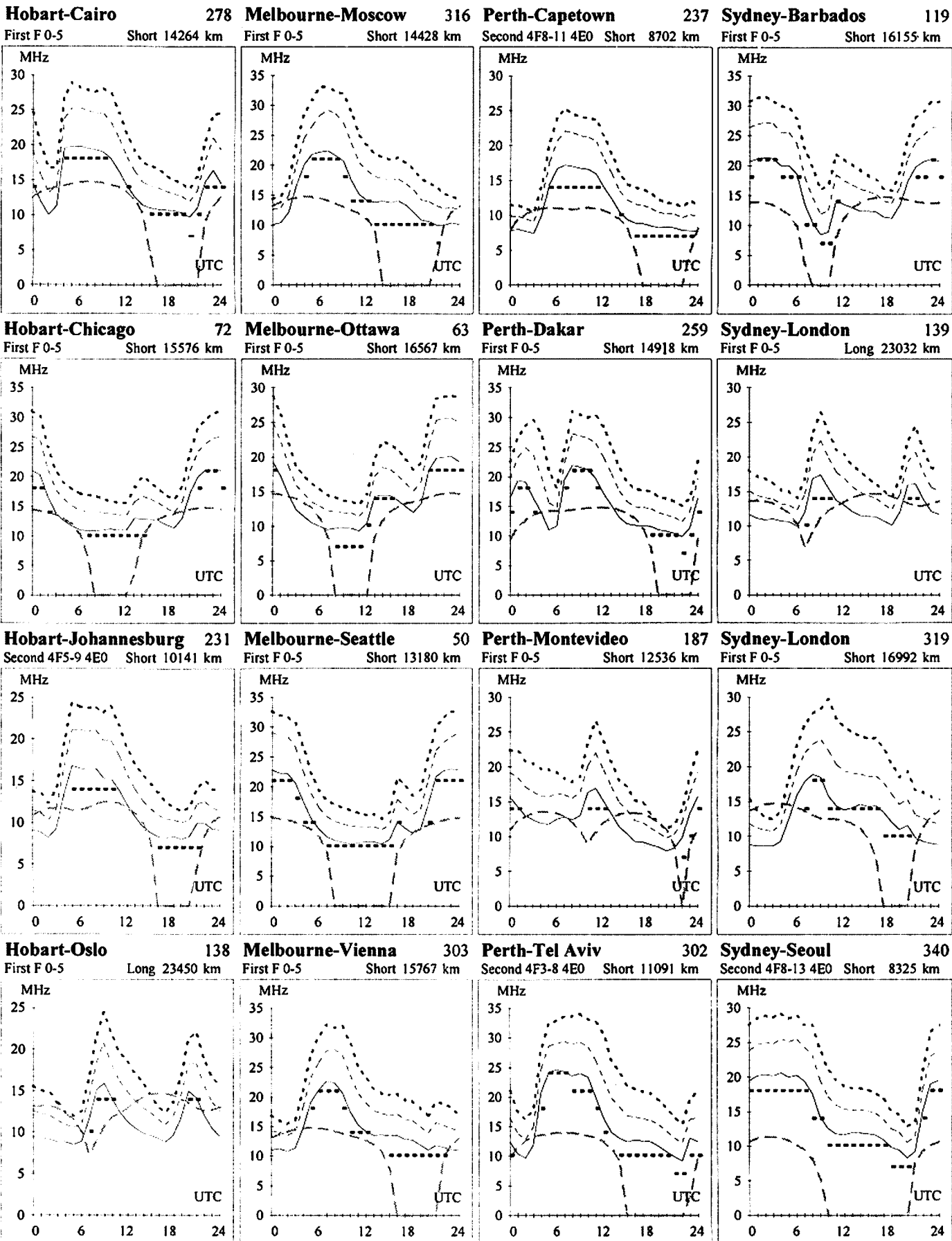
First 1F6-10 1E0 Short 2325 km



Darwin-Osaka 5

First 2F4-10 2E0 Short 5263 km





HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for **For Sale** and **Wanted** items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194

Fax: (03) 9584 8928

E-mail: vk3br@c031.aone.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne; and Mildura: Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX programs** for IBM XT/ATs *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.
- **HAM LOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone"; The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02 369 2008 BH, fax 02 369 3069. Internet address rhg@ozemail.com.au.

FOR SALE NSW

- **Portable generator parts:** Briggs & Stratton motor (new), alternator, and regulator, assemble yourself, \$200 ONO. Noel VK2YXM, QTHR, 02 9871 3079.
- **Kenwood TS-430S** HF txcvr, FM board, AM filter, books, box, EC, s/n 3052300, \$800. **Yaesu FC-107** ATU, all HF bands, book, EC, s/n ON050476, \$150. **KDK FM 2106A** 2 M FM txcvr, book, mobile bracket, EC, s/n 5582, \$200. Geoff VK2BGP, 02 6743 6519.
- Change of life!! I have decided to sell off a lot of my pre-loved equipment, including **Philips 828s** for 6 and 2 M. Most are already converted to operate on our bands and I have some xtals. Some are capable of operating on 4800 and 1200 baud. There are also some **Tiny 2s** with similar capabilities. There are a number of **commercial synthesised rigs programmed for 2 M and 70 cm**, and an **Icom 741** all mode 70 cm transceiver, ideal for satellites, recently factory overhauled. Some CB rigs too. All POA. David VK2BDT, QTHR, 02 4821 5036.
- **Kenwood TS-440** HF txcvr, mobile bracket, book, factory checked, warranty, \$1300. **Kenwood HC-10** world clock, \$100. **AEA PK-232** MBX, \$400. **Kenpro KR-800S** heavy antenna rotator, some cable, shack compass control, \$150. Peter VK2FFA, 02 4324 4160.
- **Kenwood TS-430S** txcvr with both manuals, DC power lead, recently serviced by Kenwood, \$800. John VK2FUR, 02 4625 1812.
- **Drake TR7A** HF txcvr, s/n 11680, including WARC band option, **PS7** PSU (s/n 10497), hand-held mic, \$1150, negotiable. **Drake R7A** HF rcvr, s/n 3370, extra IF filters (4 and 6 kHz), cable kit (interfaces with TR7A), extension speaker (slightly damaged), \$450 negotiable. Manuals for both units, all in good condn, sell separately or together. Pat VK2ABE, 02 6768 1470 (BH).

- **Kenwood TS-450SAT** with Digital Signal Processor DSP-100 and matching PS-53 power supply, all VGC with manuals and original packing, \$1990 ONO. **Kenwood PS-30** 13.8 V 20 amp PSU, \$250 ONO. **Kenwood AT-230** antenna tuner, \$230.00. **Linear Amp**, pair 4-400 tubes, with heavy duty external PSU, homebrew, \$750.00 or reasonable offer. **Icom IC-AT500** auto antenna tuner, \$300. **Pentium 90** computer with 2 x 500 Meg HDs, 8x CD ROM, 3.5 in floppy, SVGA monitor, sound card, tower case, Windows 95 CD and some other software including drivers, system works well and is reasonably quick, upgrading to a laptop, offers considered. **NEC Powermate 1** 286 computer with IBM VGA monitor, hard drive, 5 1/4 and 3.5 in drives, great for packet, \$65. **386 computer** with 5 1/4, 3.5 in floppies, hard drive, tower case, keyboard but no monitor but has SVGA card, \$60. **Amstrad LQ3500** printer, works well and comes with a small supply of continuous paper, \$150. **Yaesu SP-I02** speaker, high and low filtering, \$50. **Yaesu FC-707** ATU, \$150. David VK2NH, PO Box 82, Springwood NSW 2777, 02 4754 4600, 0417 293 414.

FOR SALE VIC

- **Antenna mast**, two section, 50 ft, one man operation for tilt over and wind up or down, hinged at bottom, any trial, \$450. H V Lonsdale VK3DND, QTHR, 03 5153 0717.
- Two Kenwood txcvrs, s/n 12245 and TS-810719, crystal controlled c/w xtals; **Kenwood TM-241A** 2 M rig c/w mast and coax; **MFJ-1700** Tx tuning switch; **MFJ-949D** ATU; **Palec** valve tester and valves, some in original boxes. Station closing down, no reasonable offer refused. Noel VK3DPB, QTHR, 03 9306 9231.
- **Yaesu FT-101ZD Mk2**, s/n 0230543, CW filter, YD-148 mic, workshop manual, spare new 6146s and 12B7, EC, \$550. **Yaesu FC-107** ATU, s/n 060280, EC, \$200. **Kenwood R2000** receiver, EC, \$450. **Trio 9R59DS** receiver, \$70. **W Wolf** Antennas: Duo 10-15 m, GC, \$120; Tri-band beam HB35C, 5 el, \$400. **Ferguson MLT550** line tamer, rating 550 VA, GC, \$220. Ken VK3KEB, QTHR, 03 9890 6818.



Your
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Representing Radio Amateurs Since 1910

• **Ten-Tec 580 Delta HF** txcvr. complete with PSU and Model 228 ATU, including manuals, \$495. V G Taylor VK3KVT, 03 9754 4860.

• **Kenwood TS-870**, 12 months old, s/n 80300020, with **PS-52** PSU, s/n 50700115; and **Daiwa CNW518 ATU**, s/n NJ10097, \$3600. Jim VK3NR, 03 9367 6920.

• Deceased estate **VK3WJ: Tono 9000E** communication terminal, s/n 901461; **Tono CRT1200G** monitor; **Leader LBO 310** Ham oscilloscope, s/n 910040, \$450. **VK Powermaster PSU**, 13.8 V 14/25 A, \$150. **Explorer 2** 70 cm txcvr, \$40. **ATN 10 el 2 m beam**, coax, \$30. **ATN 16 el 70 cm beam**, coax, \$50. **Debeglass guy rope**, \$1 per metre. **M9456 DC variable PSU**, \$20. Gordon VK3GB, QTHR, 03 9789 7710.

• **Philips FM92**, 99 channel 2 m 25 W txcvr; **Plessey MTR8000**, 36 channel 70 cm 30 W txcvr. Both EPROM pre-programmed for most popular simple/repeater channels. \$175 each or \$325 the pair. David VK3PDX, QTHR, 03 5174 7598 (AH), 03 5173 2510 (BH).

FOR SALE QLD

• **Kenwood TS-930S HF** txcvr, \$1100. **TR-7400 2 M base**, 25 W, \$220. **Hi-Mound HK-708** Morse key, \$40. **CQ, QST, Amateur Radio** magazines, 1960s up. **Yaesu 12/24 hr quartz analogue clock**, \$25. **Power transformers** 285 V O/P. Ferguson OP308/15 U/L 15 W. Peter VK4APD, 07 3397 3751 (AH).

• **Valves, new, boxed:** 6BQ5, 12BY7A, 5763, \$10 each. **QQVO7/50A**, \$20. **QEO8/200**, \$45. **4-400C**, \$75. **810**, \$25. Used, tested 4-1000A, \$85. **813**, four for \$50 (two unused). **High voltage capacitors:** 12 MFD 4 kVW, \$75. 8 MFD 4 kVW, \$45. **Variable air capacitors, wide spaced:** 600 pF, \$65. 120 pF, \$50. **Coaxial relays:** "N" type SPDT to 10 GHz, \$45. Ditto BNC input to 6 coax switched BNC outputs, \$40. **Test equipment:** Marconi TF2015 signal generator, \$325. Tektronix 7403N oscilloscope, 4 channel, 60 MHz, delay time base, \$400. Professional VSWR/Power Meter (Sierra), 5-10-50-150-500 watts, to 512 MHz, \$275. John VK4KK, QTHR, 07 3269 6647.

• **Icom IC-740** txcvr, excellent rxcvr with two VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, good transmission reports on all bands, excellent appearance and working order, s/n 04199, \$700. Call for copy of specs sheet. John VK4SZ, QTHR, 07 4061 3286. john@comnorth.com.au

FOR SALE SA

• **Drake TR7** txcvr, PS7 PSU, RV75 synthesised VFO, SP75 speech-processor, MS7 speaker with built-in audio filter, Astatic desk mic, \$1875. **Codan Outback Radiophone 8528 B2141**, Automatic tuner 4203 B113, matching whip, all channels for Telstar/RFDS, amateur/CB option, \$1950. Harro VK5HK, QTHR, 08 9323 9622, ayk@terra.net.au

• Deceased estate **VK5LV: Kenwood TS-940S** txcvr, s/n 7030258, \$1800. **Yaesu FL2100** linear amplifier, s/n 4C150162, \$650. 4 element 20 metre monoband Yagi with 10 metre high tower and base mounted rotator, buyer to dismantle, \$200. VK5QX, QTHR, 08 8250 1708.

FOR SALE WA

• **Icom IC-736 HF/6 M** txcvr, s/n 01080, with books and box, as new, includes optional high stability xtal unit, \$1900. D J Peterkin VK6DJP, QTHR, 08 9458 3449.

• **Icom IC-202 2 m CW/SSB** portable, mint condn, mic, handbook, s/n 3754, best offer or trade. Alan VK6PG, QTHR, 08 9275 3348.

• Deceased estate: **Yaesu FT-101E HF** txcvr, mic, handbook, \$300. **Yaesu FC-700 ATU**, \$125. **Terlin Outbacker** antenna, spring base, \$150. **RG58/62** coax cable, various lengths up to 50 m, offers. Fred VK6FRE, 08 9276 4897.

FOR SALE TAS

• **Compakratt C64**, C128, RS232 interface and cartridge for PK232. **Kenwood TS-140S**, s/n 309003056. **Kenwood PS-52** PSU, s/n 30400417. **Kenwood MC80** mic. **MFJ 989C ATU**, s/n 029449. **MFJ 498** keyer and keyboard. **Bencher Iambic key**. **Hustler SBTV** vertical antenna including 30 m resonator and ground plane. **Fritzel Super FD4** long wire dipole, all band, 1 kW CW, 2 kW SSB, complete with insulators, pulleys and matching transformer. On behalf of Dennis VK7ABU. **Tokyo Hypower HC500A ATU**, mint condn, boxed, \$200. Allen VK7AN, 03 6327 1171, 0417 354 410.

WANTED NSW

• **Kenwood TS-930S** Tx final board (x56-1430-00). David VK2AYD, 02 6585 2647.

• **811-A** (four), **8877**, **4CX1000A** (possibly with bases) valves. **GAP Voyager** antenna. **TU-2033 tuning unit** for Aerocom amplifier. **UEK-2000SAT** down-converter. **Drake PS-7** PSU. Tom VK2OE, 02 4646 1024 (evenings).

WANTED VIC

• **Tektronix Model 130 L-C** meter service manual or circuit, all costs refunded. Drew VK3XU, QTHR, 03 9722 1620.

• **External VFO** for **Kenwood TS-520S**, in good working order, offers from interstate and country VIC welcome. Michael VK3MRG, 03 9747 9342 (AH), mobile 0419 581 226, e-mail vk3mrg@nemesiis.com.au

• **Yaesu FR-101SD** or **FR-101S**, in good condn and working order. Damien VK3RX, 03 5427 3121.

• **7360 balanced modulator valve**. Stan VK3SE, QTHR, 03 5332 2340.

WANTED QLD

• **6BV7** valve. **HV capacitors**, 4 kV minimum, electrolytics 2200 µF 400 V minimum. Peter VK4APD, 07 3397 3751 (AH).

• **Simpson Model 263** analogue multimeter, can you assist with any technical details, all replies answered. Dick VK4GOR, QTHR, 07 3379 1600.

WANTED WA

• **Kenwood TS-711A 2 M** all mode txcvr. D J Peterkin VK6DJP, QTHR, 08 9458 3449.

MISCELLANEOUS

• **The WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

• If you got your licence before 1973 you are invited to join the **Radio Amateur Old Timers Club**. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply application forms. Both are QTHR in any Call Book.

ar



The following equipment was stolen from the QTH of Gary Beech VK2KYP in St Marys on Thursday, 29 January 1998 at 11.00 am. If you have any information that may lead to the recovery of the equipment, please get in touch with Gary as soon as practicable.

Yaesu FT-736 VHF/UHF transceiver including 6 m and 23 cm, s/n 1C410598.

Icom IC-127IA, s/n 01055

Alinco DX-70T, HF and 6 m transceiver.

Tandy HTX200, 10 m transceiver

Icom IC-735, HF transceiver, s/n 13501

DSE PSU, 3 to 25 V, s/n 92521418.

Plus other domestic entertainment equipment - VCRs, camera, etc.

ar

■ Comment Editor's Comment

continued from page 2

experimenter now 100 years ago, a milestone which has not been celebrated. It would be interesting to compare Selby and Dennis to see who was actually first.

After the reference to Selby in the *WIA Book* chronological table are further references of wireless telegraphy transmissions in Sydney, Western Australia, Tasmania and Adelaide.

Each of those recorded occasions may

be opportunities to celebrate local centenaries of wireless next year, paying tribute to the pioneers and gaining recognition for the role amateur radio has had and continues to play.

Likewise the year 1999 will be the 75th anniversaries of the first two-way communication with the USA and Britain by Australian radio amateurs in 1924 - certainly milestones worth celebrating.

Jim Linton VK3PC

Guest Editor

ar

WIA Divisions

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Call Sign	Weekly News Broadcasts	1998 Fees
VK1	ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blernings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2	NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Geoff McGrorey-Clark Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2EO VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3	Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) Web: http://www.tbsa.com.au/~wiavic/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, (X) and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4	Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powenup.com.au	VK4HD VK4JPH VK4WX	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 28.400 MHz SSB, 29.220 MHz FM, 52.525 MHz FM, 146.700 MHz FM, 147.000 MHz FM, 438.525 MHz (Brisbane only), regional VHF/UHF repeaters at 0900 hrs Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM, regional VHF/UHF repeaters at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5	South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6	West Australian Division PO Box 10 West Perth WA 6872 Phone 09 351 8873	President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia e-mail address: vk6wia@faroc.com.au	VK6KZ VK6ZLZ VK6OO	146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busselton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7	Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Ron Churcher Secretary Barry Hill Treasurer Mike Jenner	VK7RN VK7BE VK7FB	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart) Repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8	(Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz).			Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times

Note: All times are local. All frequencies MHz.

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April 1998

Volume 66 No 4

Journal of the Wireless Institute of Australia



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If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with the Post Office before contacting the registered office of the WIA. ©

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HMAS Vampire at the Australian National Maritime Museum in Darling Harbour, Sydney. See page 18 for details of amateur radio station VK2CCV aboard HMAS Vampire.

BACK ISSUES

Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

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The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

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■ Comment

Editor's Comment

MIR Mania

The biggest event happening in our hobby currently is the many thousands throughout the world trying to make that elusive contact with the orbiting Russian space station MIR.

The mission, which continues until next month, is of intense interest to Australians because on board is the so-called "South Australian Astronaut" and now cosmonaut, Andy Thomas VK5MIR/KD5CHF. He featured on the cover of February's *Amateur Radio* magazine.

I have joined the many trying to make voice and packet contact with MIR since late February but, alas, at press time have had no success with either mode.

However, the inability to log a personal contact has not greatly lessened the enjoyment of experiencing this historical event. By sandbagging, a lot can be gleaned through what Andy is telling those he does contact.

On about half a dozen passes over Australia, when Andy has been on the microphone, the signal was R5 and S7-9 with excellent modulation. He has, among other things, talked about the brilliance of the Aurora Australis (southern lights); he was over the Southern Ocean when he saw the event. Later Andy said: "It has a green glow and it was really amazing."

He also plans to take photographs of Australia from MIR and, like all good photographers, said: "I am waiting for the right lighting.... it's not quite bright enough yet."

Andy has mentioned his fellow crew members and veteran MIR cosmonauts, Flight Commander Talgat Musabayev and Engineer Nikolai Budarin, fixing a solar array outside the craft.

During a contact with a VK5 he accepted an invitation to one day join the locals at a barbecue to enjoy a glass of red wine, and asked his contact to have a glass on him in the meantime.

During contacts with VK5s he has shown his local knowledge and even talked about his bicycle exploits as a young man living in the Adelaide area. In talking to a VK7 in Burnie he recalled having worked at the nearby Savage River mine 25 years ago.

The crew's schedule is based on Moscow time, which is three hours ahead of UTC, and Andy has explained that his working day is around 12 hours long from 9 am to 9 pm.

Andy has admitted that prior to becoming a space traveller he had no idea that so many amateur radio enthusiasts existed.

He sounds like a veteran on the microphone and gives the impression that his amateur radio involvement won't end when he returns to earth. Welcome to amateur radio, Andy!

Jim Linton VK3PC

Guest Editor

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■ News

WIA News

Roger Harrison VK2ZRH,
Federal Media Liaison Officer

Romance of Morse the Key to New Interest in Amateur Radio

Publicity in a suburban Sydney newspaper about a group of local amateurs activating the Overland Telegraph Station museum at Alice Springs during Heritage Week this month sparked an extraordinary public response.

The story, published in the *Parramatta Advertiser*, highlighted the coming expedition of radio amateurs and Vietnam veterans from Sydney to Alice Springs for the event, as told by organiser, Jim Walker VK2JW.

The self-funded group of 16, including five amateurs and some members of the Sydney Morsecodians Fraternity, will set off in four-wheel drive

vehicles, touring outback areas of NSW, South Australia and the Northern Territory en-route to Heritage Week in Alice Springs.

The Overland Telegraph Station was restored to working condition by the Sydney Morsecodians Fraternity in 1989 and operates as a self-funded museum.

The museum's telegraph station will be used to send some 3000 telegrams by Morse code over a 10-day period spanning the Heritage Week event. The telegrams will be received, via a direct link, at the National Science and Technology Centre in Canberra.

Following publication of the story,

Jim received a series of calls from people attracted by "... *the romance of Morse code.*" He was interviewed in following weeks on a series of regional and local broadcast station programs and by ABC TV in the Northern Territory. This publicity brought further response from members of the public keen to learn that Morse code was being kept alive by enthusiasts and to find out how they could get their amateur licence and use Morse code themselves.

The *Parramatta Advertiser* story was arranged by WIA Federal Media Liaison Officer, Roger Harrison VK2ZRH.

AX*ITU Calls Signs Available for World Telecommunication Day

Special event stations signing AX*ITU will be heard once again on 17 May this year, for the annual World Telecommunication Day which commemorates the founding of the International Telecommunications Union (ITU) in Paris in 1865.

The Australian Communications Authority (ACA) granted use of the AX*ITU series call signs for use by WIA Divisions during World Telecommunication Day, in advice to the WIA on 12 March.

The AX*ITU stations may operate between 0000 and 2400 UTC on the day, which for stations in the Eastern states is between 1000 EAST on 17 May and 1000 EAST on 18 May. Local times will be different for stations in the central and western time zones. This is a change from last year, when operation was permitted for the 24 hours local time on 17 May.

The amateur radio fraternity across the world joins in to celebrate World Telecommunication Day by operating special event stations, for which unique QSL cards are issued for confirmed contacts.

Last year, AX2ITU and AX6ITU were activated by the NSW and West Australian Divisions, respectively. This year, at least the NSW Division's AX2ITU station will be active, but no advice had been received by *WIA News* about other Divisions' plans to sponsor AX*ITU stations.

More details about World Telecommunication Day can be found on the ITU's Web site at www.itu.int.

More Publicity for Amateur Radio

WIA South Australian Division President, Ian Hunt VK5QX, was interviewed for a segment about astronaut and radio amateur, Andy Thomas KD5CHF/VK5MIR, on Channel 9's national morning *Today* show in March.

Running for some seven minutes, the segment included an interview with Andy's father, who lives in Adelaide, and a simulated contact between VK5MIR and VK5QX.

■ Test Equipment

A Dip Oscillator, Crystal Checker and Signal Source

Drew Diamond VK3XU
45 Gatters Road
Wonga Park VIC 3115

Next to a multimeter and an SWR bridge, the dip oscillator is arguably one of the handiest devices to be found in the amateur's shack. With skilled application, the radio worker may determine the resonant frequency of tuned circuits, find the value of unknown pF capacitors and micro-henry inductors, sniff powered RF circuits, and measure some antenna and transmission line characteristics. Nearly all of the standard amateur radio handbooks have details on how to apply this versatile instrument.

Mysteriously, there does not appear to be a commercially-made gate dip oscillator (GDO) available locally at present. So, here are details of a home-made dipper for you to try. Frequency range is from 1.6 MHz to 32 MHz in three coil ranges. The device also functions as a rather good crystal checker, where crystal activity is directly indicated on the meter (even my most reluctant "re-grind" fires up in this circuit).

An internal buffer amplifier is included so that the oscillator may be used as a crystal or free-running signal source where required, without having to go to the trouble of coupling directly to the dipper's coil, thus avoiding any possible errors due to frequency pulling. The 0.5 mW signal output may drive a frequency counter, or impedance bridge for instance.

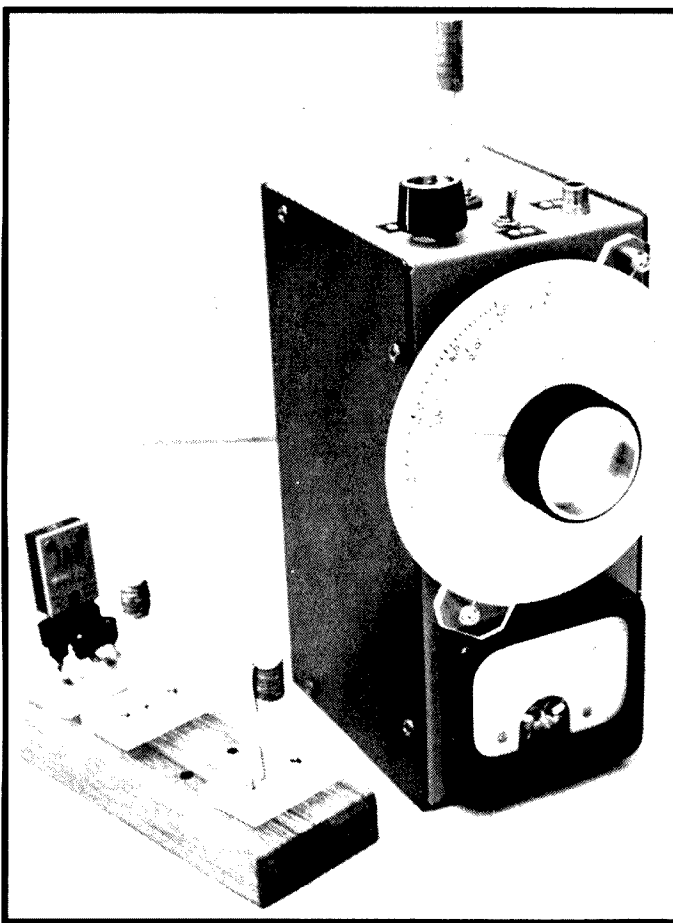


Photo 1 - The Dipper and coil set.

Circuit

A Colpitts configuration at Q1 maintains oscillation in the tuned circuit tank formed (mainly) by the dual-gang capacitor and coil, these being effectively connected between gate and drain of the MPF102, an N-channel FET. When the circuit is oscillating, a DC potential results from rectification of the gate signal by the clamp diode, thus causing a direct current to flow via the diode, 33 k resistor, 100 k pot and 50

micro-amp meter. The amplitude of current indicated is proportional to the strength of oscillation.

If the coil of the oscillating dipper is coupled to a passive tuned circuit whose resonant frequency matches that of the oscillator, a "dip" in gate signal will be observed. Most traditional radio books simply state that energy is "absorbed" from the oscillator by the passive circuit, thereby causing the observed dip. Rather, the only thing that does any absorbing is the resistive (or loss) component of the passive circuit, whose

pure inductance and capacitance actually return energy back to the oscillator by mutual coupling, which arrives out of phase with the original signal. I believe it is this phenomenon which causes the apparent reduction in the strength of oscillation.

The marks of a good dipper are good frequency stability, freedom from false dips (generally caused by unwanted resonances within the oscillator), constancy of meter indication across each coil range, sufficiently "strong" oscillation which is not easily damped, and a good clear dip when coupled to a passive circuit. The popular Colpitts configuration satisfies all these requirements.

In this iteration, the main source of possible false resonance problems is in the RF choke (RFC) which feeds a 9 V supply to the drain of Q1. Locally available values of 1, 2.2 and 2.5 milli-henry, both moulded and pie style,

were tried, and found by experiment to give satisfactorily smooth operation throughout the specified range. However, a 1 milli-henry Toko RFC gave best results.

A 1 pF capacitor lightly couples the oscillator signal to the gate of the buffer amplifier at Q2, another MPF102. The sinusoidal signal at the drain of Q1 is reasonably well preserved at the drain of Q2, where it is presented to the output connector.

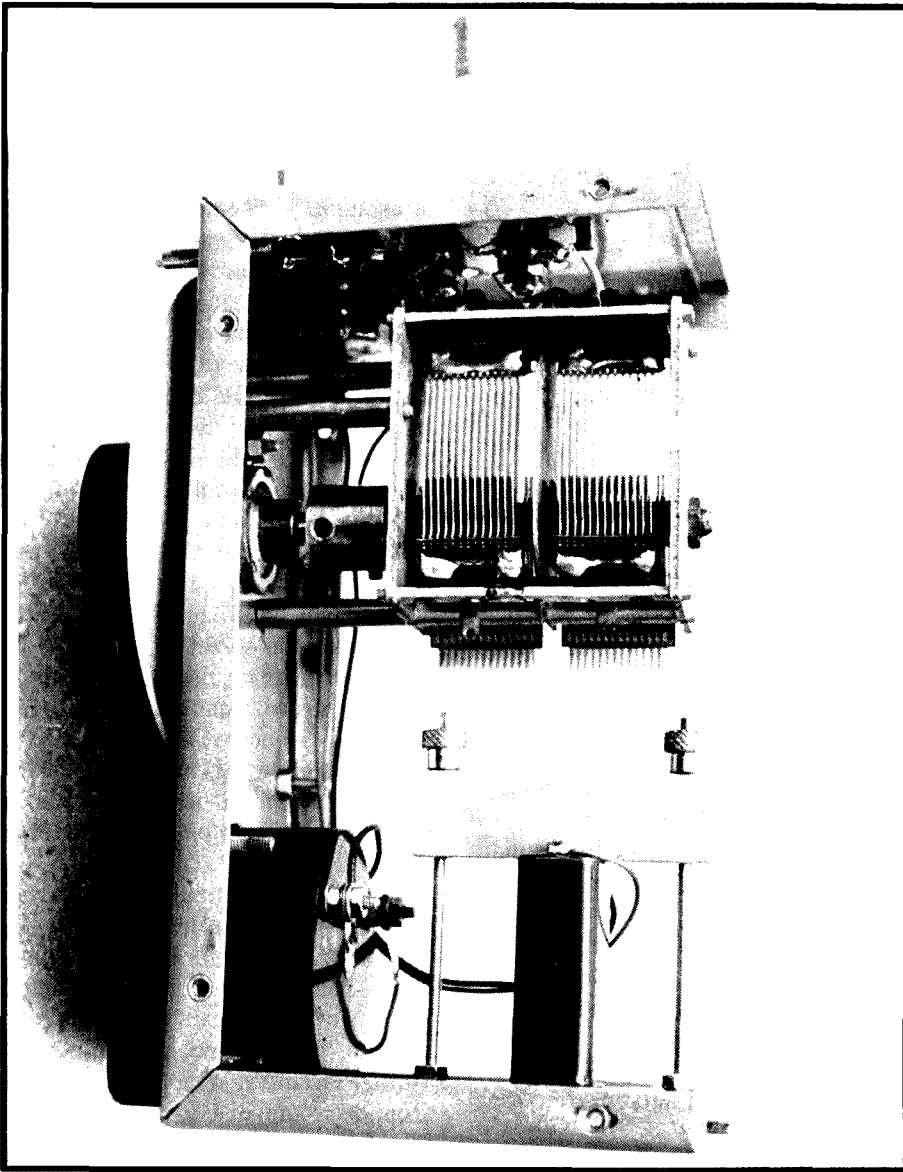


Photo 2 - Internal view of the Dipper.

The circuit was found to operate best, and give clearest dip indications, at about 8.5 V, which is ideally supplied by an ordinary 9V "transistor" battery. Current drain is about 5 mA.

Construction

As you can see, no efforts toward miniaturisation have been made. My home-made aluminium box measures 185 x 100 x 80 mm. These dimensions were largely dictated by the "common-as-mud" dual-gang broadcast variable capacitor (see Parts below) which was on hand. A physically smaller capacitor would naturally yield a more compact package if preferred. However, keep in mind that a small instrument will have a

smaller, and perhaps harder to read and calibrate, dial.

Circuit layout is not especially critical. A pair of ordinary Dick Smith or similar insulated banana sockets spaced 0.75 inch (a standard) are used for the plug-in coil connections, which are located centrally in the top of the case. A ground-plane consisting of a piece of plain printed circuit board or tin-plate may be located under the sockets, and held captive by these. Use point to point component wiring for the oscillator and buffer. Clip passive component leads as short as reasonably practicable.

You will find that sufficient parts have one lead soldered to chassis "ground" to provide adequate mechanical support for

the completed circuit. Note that the variable capacitor lugs should be connected with flexible wire, such as copper braid. The 100 k sensitivity pot, on/off switch and output connector should be located in the top panel adjacent to the coil as shown.

To give good manual control of frequency, a planetary reduction drive between capacitor spindle and dial is recommended. You have a choice of two dial styles; the dial disc rotates under a fixed Perspex cursor (shown in Photo 1), or the dial disc is fixed to the case and the Perspex cursor moves. The aluminium disc shown has a diameter of 110 mm. It should be given one or two coats of white undercoat preparatory to calibration. Reference 3 contains details of a neat space-saving idea, where the builder has made a drum dial to fit inside the case of a UHF dipper.

The 8 mm plastic coil formers were cut from the outer tubes of some new Biro™ brand ball pens purchased for the purpose from a local newsagent (see coil table for details). Drill two 1 mm holes across each coil form diameter as shown in the drawing. There is sufficient overlap between ranges for a turns tolerance of +/- two turns for L1 and L2, and +/- one turn for L3, so don't be too concerned about those odd half-turns which go through the holes.

Perspex, polycarbonate, or other low loss insulating material is ideal for the coil bases. Drill a hole in the centre of the base to take the formers. For best strength, the form must be a snug fit in the base. I suggest that you drill a few thousands-of-an-inch undersize, then hand-ream to final diameter.

The banana plugs may be glued or threaded in as desired. Pre-tin the plugs before they are inserted into the Perspex, otherwise the greater heat required in soldering the coil wires may damage the thread or melt the glue. Wind the coils before they are super-glued into the bases. When soldering the coil connections, lightly grip the plugs in a vice to act as a heat-sink. The supplied plug tops are not required.

A battery holder is recommended. That shown was home-made from scraps of insulating material. Some suppliers do stock 9 V holders, however.

If the crystal check function is desired,

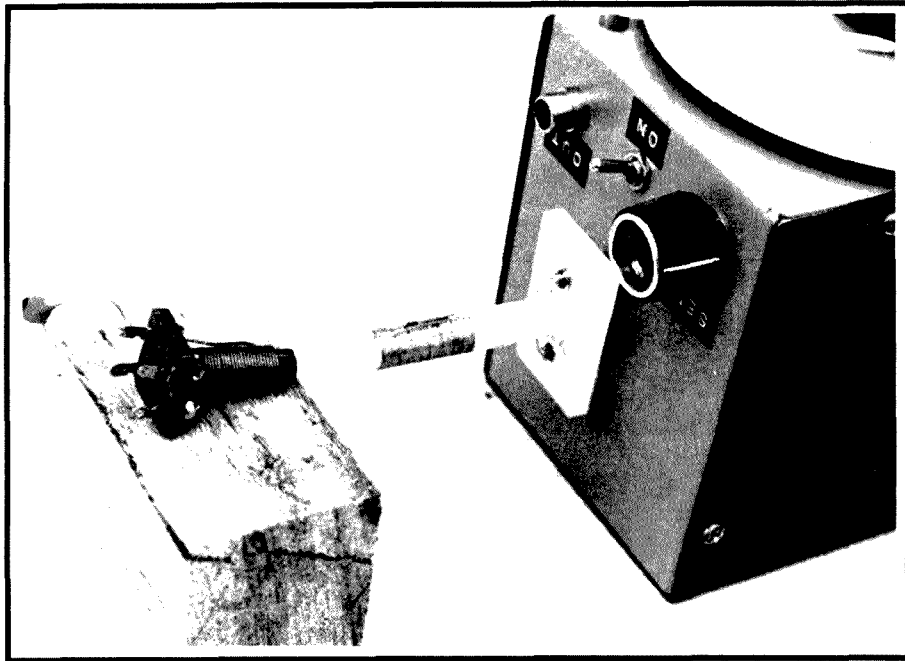


Photo 3 - Dipping a plain coil.

make an additional base and banana plug assembly to which may be soldered, in parallel, crystal sockets to take style-D, FT-243 and any others that you may require. The very old DC-11 and 0.75 inch style units may be plugged directly into the banana sockets of the dipper.

Calibration

Plug in each coil and check that the meter gives at least full-scale (use the sensitivity potentiometer to adjust to about 45 micro-amp) deflection across each range. The meter indication should be reasonably constant, with no drop-outs or false dips (you may get, with some makes of RFC, one or two very broad "hollows" – these should not be a problem).

Ideally, some sort of temporary dummy cursor should be made up which has holes through which the calibrations may be marked. If you have access to a frequency counter, connect a coax cable between the dipper output and your counter input. Check that each range generates the frequencies specified, with some overlap.

No counter? Plug a clip-lead into the input of a general coverage receiver. In the shack, you should be able to hear the dipper signal on the receiver. Simply tune the receiver and dipper to appropriate calibration points. When the

ranges and over-lap have been confirmed, apply a coat of coil-dope or clear nail varnish to cement the coil windings. When the dope is dry, mark salient calibration points upon the scale using a fine black pen, or 0.4 mm pencil. I used HB pencil, which can easily be erased should a mistake occur. Mark the 100 kHz (0.1 MHz) increments to about 5 MHz. Above 5 MHz only the whole-numbered MHz need be marked. Do not try to squeeze in lots of fractional calibration points, otherwise the dial will be too cluttered.

In practice, interpolation will provide sufficient accuracy. When calibration is complete, the dial should be removed and given one or two coats of clear lacquer to protect the markings. You should find that the lacquer also darkens the pencil calibrations and so improves contrast.

Operation

To measure the resonant frequency

of a parallel LC tank, the dipper's coil is placed near the passive coil, initially spaced about 10 mm distant. Depending upon physical constraints, the coils may be end-on (Photo 3) or side-on to obtain a dip. Set the sensitivity pot for a reading of about 90 % of full-scale. Sweep the dial around the estimated resonant frequency until a dip is found.

To improve accuracy, increase the coil spacing to the point where the dip is just perceptible. If the "Q" of the passive circuit is low, the dip may be very shallow, so close observation may be necessary. Large coils, such as those used in couplers and power amplifier tanks, may be measured similarly by placing the dipper coil near to, and parallel to, one end of the passive coil.

If the unknown tank has a variable component, it is sometimes easier to set the dipper to the required frequency, and alter the passive variable.

Parallel connected LC circuits using toroidal coils may be checked by placing the dipper coil in the one-turn loop effectively formed by the connection (Photo 4).

When investigating energised LC circuits, best sensitivity is generally obtained by looking for a rise, or flick, in meter reading as the oscillating dipper is swept over the expected frequency.

Take great care around high-voltage circuitry. Wrap insulating tape around the dipper coil if there is any

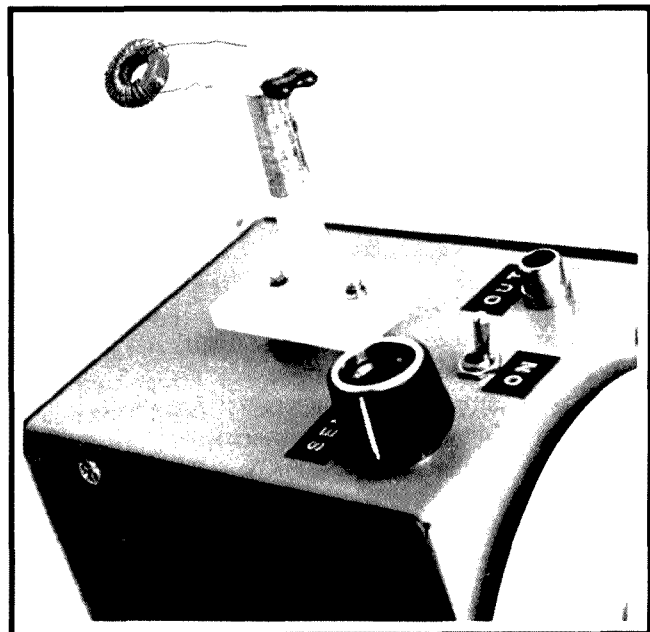


Photo 4 - Dipping a toroidal coil.

possibility of touching the energised circuit. A handy option would be the addition of a jack for high-impedance headphones, wired so that the 'phones connect in series with the 9 V end of the RFC. Then you can actually listen for the beat and any modulation when checking energised circuits.

To check crystals, the dial must be at the high frequency end (minimum C). Plug in the crystal, using an adapter if necessary. The meter indicates activity. In ladder filter work, for instance, we can check for relative frequency and activity, and match sets accordingly.

Parts

If you are new to radio, you may be wondering where to buy a dual 415 pF per gang variable capacitor? Never fear, they are by no means rare items. Quite

good used capacitors may be obtained at hamfests and similar swap-meets (average cost about \$3), or bartered from radio friends, and so on.

The same applies to the 50 micro-amp meter (a 100 micro-amp will do). They are rather expensive if new. That shown (a bit old style, but still good) was purchased at a recent hamfest for \$5. Ditto for the planetary reduction drive, although they are available new from Dick Smiths.

If you genuinely cannot locate a variable capacitor, then do please write to me. With this project in mind, I have been quietly collecting suitable units at hamfests and from radio mates, and can send one to you at very nominal cost. Mention if you need a 3/8 shaft to 1/4 inch reducing coupler. I also have some spare Toko 1 milli-henry RFCs. The

remaining parts should be available from the usual electronics component suppliers.

References

1. *Radio Communication Handbook; RSGB (any edition).*
2. *The ARRL Handbook (any edition).*
3. *Test Equipment for the Radio Amateur; Smith, G4FZH, RSGB.*
4. "A Dip Meter using the Lambda Negative Resistance Circuit"; Butler, VK5BR, *Amateur Radio*, Jan '97.
5. "A Gate Dip Oscillator or GDO"; Eunson, VK4SO. *ARA Vol 8 No 13.*
6. "A Simple Dip Meter"; Diamond, *Amateur Radio*, June '90.
7. *Servicing with Dip Meters; Lenk, Foulsham-Sams.*

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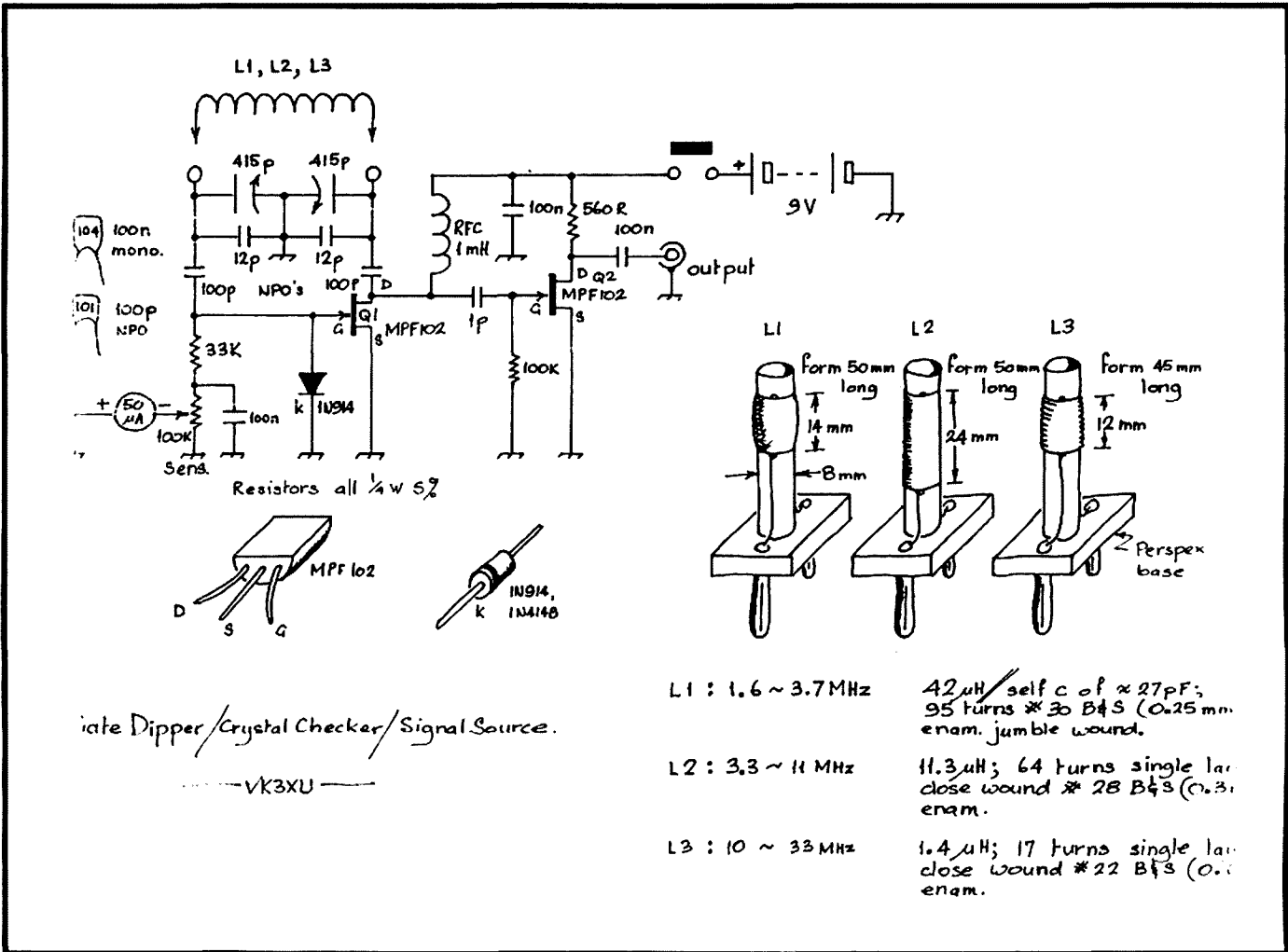


Fig 1 - Schematic of the gate dipper, crystal checker and signal source. (Drawn by Drew Diamond VK3XU)
L1 1.6 - 3.7 MHz 42 µH, self C of approx 27 pF, 95 turns of 30 gauge B&S (0.25 mm) enam jumble wound.
L2 3.3 - 11 MHz 11.3 µH, 64 turns single layer close wound 28 gauge B&S (0.3 mm) enam.
L3 10 - 33 MHz 1.4 µH, 17 turns single layer close wound 22 gauge B&S (0.63 mm) enam.

■ Receivers

A Six to Two Receiving Converter

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Introduction

The availability of crystal oscillator modules used in computer equipment has simplified the construction of converters for the amateur bands. An example is the unit described here.

Allowing six metre reception on a two metre multi-mode transceiver, this project should appeal to both the newcomer and the seasoned DXer. Those curious about six metres can build this converter to explore 50 MHz before deciding whether to buy a transceiver. More experienced operators could use this unit along with a two metre transceiver or scanner to receive beacons and other signals that provide early warning of an impending opening.

Converting 48-52 MHz to 144-148 MHz, the converter is intended mainly for the SSB/CW operator. However, coverage of the top half of six metres, where FM is the dominant mode, should be possible if your two metre transceiver or scanner tunes between 148 and 150 MHz.

Circuit Description

The basic design of the converter is similar to that described in Reference 1. It makes use of a 47.98 MHz crystal oscillator module. The 95.96 MHz second harmonic from the module is filtered by a pair of tuned circuits. This local oscillator signal is fed to an NE602 mixer. A BF981 RF pre-amp contributes to the converter's high sensitivity – connecting a metre-long wire antenna will produce a large increase in received noise.

Construction

The mixer and RF pre-amp stages are constructed on an etched printed circuit board housed in a small die cast box. To save drilling, the oscillator and mixer

components are soldered straight to the etched copper side of this board. The die cast box is enclosed in a larger case to allow space for the oscillator/regulator stages and the possible later addition of a transmitter or transmit converter.

The oscillator/regulator is also built on a small piece of printed circuit board material, but the components are not soldered to it. Instead, the parts are mounted on a small piece of perforated matrix board. PC board pins are used to fasten the matrix board to the PC board.

Build and test the oscillator portion first. An FM broadcast receiver and simple RF probe (preferably with an analogue meter) can be used to align this stage. However, other instruments such as a dip meter, frequency counter and a spectrum analyser may also come in handy.

L6 and 7 are wound on a 6.5 mm drill bit. The wire thickness is not critical – the wire used in the prototype was salvaged from a Philips FM1680 VHF transceiver. The 25 pF trimmer capacitors used are of the 'beehive' type from the same source. Note that both 100 nF capacitors are mounted very close to the 7805 regulator.

Tune your FM receiver to 96 MHz. Applying power to the oscillator should produce a carrier signal in the receiver. Using either the RF probe (connected to the L6 tap) or the FM receiver, adjust the trimmer capacitors for maximum output. Note that these settings will be interdependent.

Construction of the mixer stage can now commence. Like L6 and L7, L5 is self-supporting. It is wound on a 4 mm diameter drill bit. Bare wire may be used for this coil. If available, use a dip meter to adjust L5's trimmer to resonance on 146 MHz.

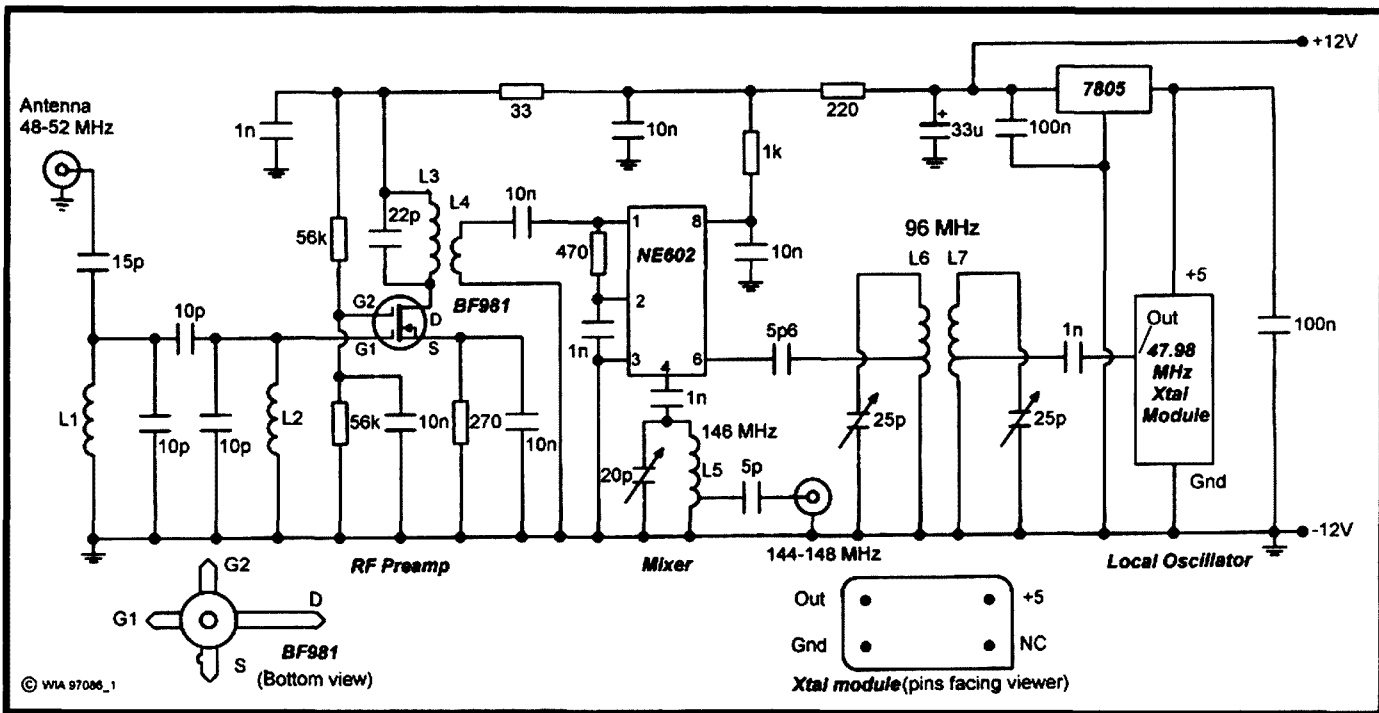
With a low-power 50.2 MHz signal applied to pin 1 of the NE602, apply power and connect the two metre receiver. The 50.2 MHz carrier should be heard when the receiver is set to approximately 146.160 MHz. Success in this test indicates that both the oscillator and mixer stages of the converter are working.

A previous version of this converter had a 14 MHz IF. This allowed 50 MHz reception on an HF valve communications receiver. The gain of this set was lacking, and the BF981 RF stage was required for adequate sensitivity. Since then, the converter was modified to have a tuneable IF of around 146 MHz, but the BF981 RF preamplifier was retained. This makes the converter's gain very high.

Those intending to use the converter with a proper antenna for six metres should first try the converter without the BF981 preamplifier stage (though the front-end filter consisting of L1 and L2 should be retained for high rejection of out of band signals). If sensitivity is adequate, there will be no need to include this stage. For our purposes, adequate sensitivity means that connecting a receiving antenna caused a significant increase in noise from the two metre receiver. Apart from the simplicity of not adding the preamplifier, performance in the presence of strong local signals will be better when the gain of the converter is limited to the minimum required to provide good sensitivity.

The main job in building the pre-amp stage is in winding L1, L2 and L3/L4. These inductors are close wound on 1/8" slug-tuned formers. Use enamelled copper wire (gauge about 0.4 to 0.5 mm) for these coils.

Because of its high gain, the preamplifier stage may self-oscillate if precautions are not taken. Measures to ensure stability include using short, direct connections and positioning L3/4 well away from L1 and L2. Provision should be made for an earthed metal partition between these coils should it be found necessary. It is also desirable that coils be some distance from the lid of the box to prevent them from being detuned when the lid is attached.



Schematic diagram of the six to two receiving converter.

L1, L2 - 7 turns close wound on 1/8" slug-tuned former.

L3 - 7 turns close wound on 1/8" slug-tuned former

L5 - 6 turns 4 mm diameter, 10 mm long, tap 1.5 turns from ground.

L6, L7 - 6 turns 6.5 mm diameter, 12 mm long, tap 1.5 turns from ground, separation between L6 and L7 is 5 mm.

Operation

Final adjustment consists of peaking L1, L2, L3/4 and all trimmer capacitors for strongest received signal on a weak 50 MHz transmission. Initially use a local source to assure a sufficient signal for adjustments to be made. Then experiment with a more distant signal (perhaps from a beacon or another amateur) to test the converter's sensitivity. Note that there is some interdependence between the settings of L1 and L2. Also, if the shielding or separation between L1 and L2 and L3/L4 is insufficient, oscillations may be heard while adjustments are being made.

Anything from a few metres of wire to a multi-element beam will serve as a receiving antenna. Because it forms a quarter wave on six metres, a 5/8 wavelength whip for 144 MHz is ideal.

Results with this converter have been pleasing. Strong signals from both VK4 and VK5 were heard during last Summer's sporadic-E season. During the last sunspot cycle, when the first version of this converter was completed, signals from Japan, New Zealand and

Eastern Australia were heard with nothing more than a G5RV-type antenna being used.

Further Thoughts

By adding an extra mixer and linear amplifier stages, it should be possible to use the converter described here as the basis of a six to two metre transverter. Alternatively, if CW-only operation is required, a simpler approach may be to build a "trans-converter", that is a transmitter and receiving converter in the

one box. A station consisting of a two metre multi-mode transceiver, the receive converter featured here and a simple four or five transistor CW transmitter featuring a VXO would be a good combination for the CW operator wishing to work DX on six.

References

1. Diamond, D - Receiving Converter For Two Metres, *Amateur Radio*, September 1996.

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Making News With News

The WIA Queensland Division's weekly news service, *Qnews*, has broken new ground in the delivery of news to Division members and the amateur radio fraternity at large.

They pipped the American Radio Relay League (ARRL) to the post earlier this year in providing an *Internet audio broadcast service*. This can be accessed at www.wiaq.powerup.com.au/realaudio/qnews.htm. This allows amateurs and computer/Internet enthusiasts to actually hear an amateur radio news broadcast - the same as transmitted weekly by the QLD Division station, VK4WIA.

Qnews editor and presenter, Graham Kemp VK4BB (a broadcaster by profession), takes pride in being "first, fast and factual" with *Qnews*.

Qnews was first with an amateur radio news service on Teletext (years ago!) and the first to initiate *regular news swaps* with overseas amateur societies, last year.

Repeater Link VHF/UHF Tuneable Signal Generator Using a 72-74 MHz VFO

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Modified Signal Generator

January *Repeater Link* contained an article on a VHF/UHF tuneable signal generator using a 29 MHz VFO oscillator circuit. Clive VK6CSW has taken this design and produced his own version using a different oscillator design and a different fundamental frequency of 72 to 74 MHz. Rather than go into too much detail, as most of the points were discussed in the January

article, here is a brief description of the circuit and design concept from Clive VK6CSW.

The Design

When working at VHF and UHF we need to be very conscious of the effect of small changes in component values. This version uses the second harmonic of an oscillator tuneable from just below 72 MHz to just above 74 MHz. Assuming that the coil has an inductance of 0.25 μ H, the total parallel capacitance to

resonate at 72 MHz is about 19 pF. To raise the frequency to 74 MHz requires the capacitance to be reduced by only 1 pF.

Temperature Stability

The circuit is surprisingly stable. The oscillator only drifts for a few minutes after switch on and from then on remains within a few kilohertz. Ceramic NPO capacitors have been used along with some temperature compensation ceramic capacitors to minimise temperature drift.

Tuning

The 1 k pot gives a tuning change of about +/- 25 kHz, more than adequate to trim out any slight drift, while the 2.4 and 10 k resistors at each end of the 50 k coarse-tuning pot are used to trim the exact tuning range and will need to be determined by experiment.

The 10 k resistor should not be reduced! Its purpose is to keep the tuning voltage high enough so the capacitance change with voltage remains reasonably linear. Note that this pot is not a multi turn pot. In operation with a light touch,

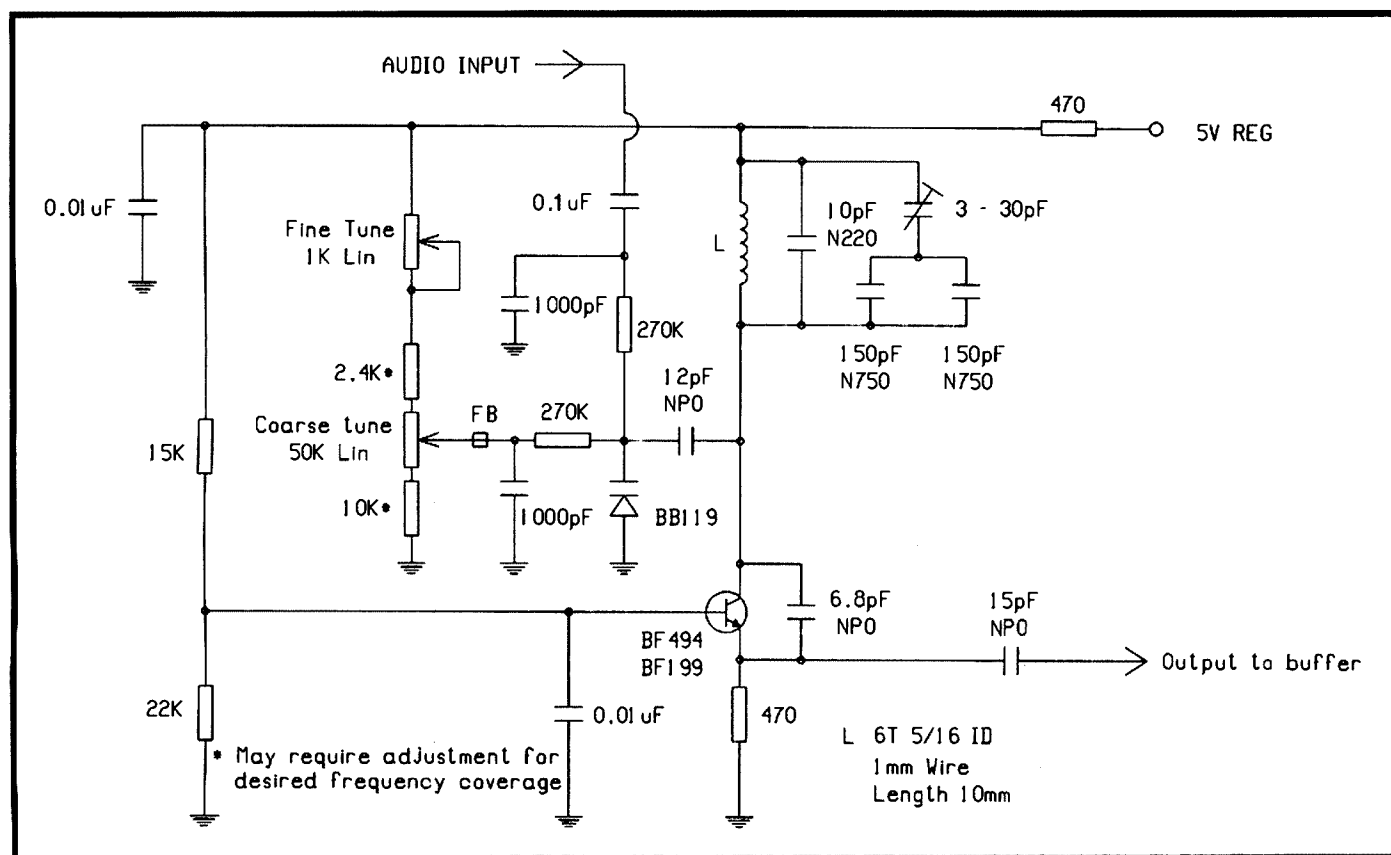
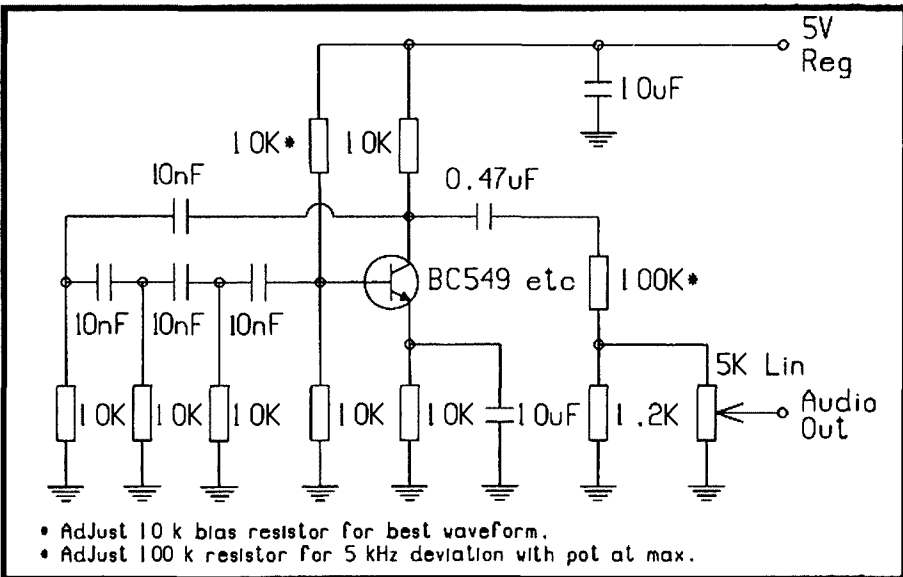


Fig 1 - Schematic of the VK6CSW signal generator 72 - 74 MHz VFO. (Drawn by VK6UU)



- Adjust 10 k bias resistor for best waveform.
- Adjust 100 k resistor for 5 kHz deviation with pot at max.

Fig 2 - Schematic of the VK6CSW 1.2 kHz audio oscillator.
(Drawn by VK6UU)

finding the right frequency is not too difficult with a direct drive pot. It also allows for easy application of a dial. I used a Philips Beehive capacitor across the inductor to set the frequency, as these prove very stable. However, whatever you find to be stable can be used.

Buffer Circuit

The buffer circuit used was basically that described in January *Repeater Link*, except the coupling capacitor out of the oscillator was reduced to 15 pF and the output capacitor into the attenuator reduced to 1.5 pF. Note also that the supply voltage is five volts rather than the nine volts used in the January circuit.

Construction

It is most important to shield the oscillator to prevent leakage. Use a box within a box along with feed-through capacitors. The assembly can be made physically quite stable. Even picking up and shaking results in negligible change of frequency. Some microphonics can be heard if the unit is tapped due to the coil moving. Silastic® reduces this effect.

The audio input only requires about

20 mV for 5 kHz deviation. A simple audio oscillator, such as a one transistor phase shift oscillator, can be used and the circuit is included as Fig 2.

Pagers Pagers Pagers

While looking at the ACA's Internet Web site the other day I did a search of how many transmitters there are on 148.0125 MHz. This is the lowest pager frequency, only 12.5 kHz above the top end of our 144 to 148 MHz band. The number came out at 234! That's right, there are 234 pagers on just that one frequency alone in Australia. No wonder we have interference problems.

40 m SSB Gateway

A submission, along with a licence application, has been completed and sent to the ACA, to license a 40 m SSB gateway to a two metre repeater in Perth. Amateurs with the full licence grade on 2 m, along with the correct CTCSS tone, will be able to contact other amateurs on 40 m SSB. We await a response from the ACA.

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Technical Abstracts

Gil Sones VK3AUI
C/o PO Box 2175, Caulfield Junction VIC 3161

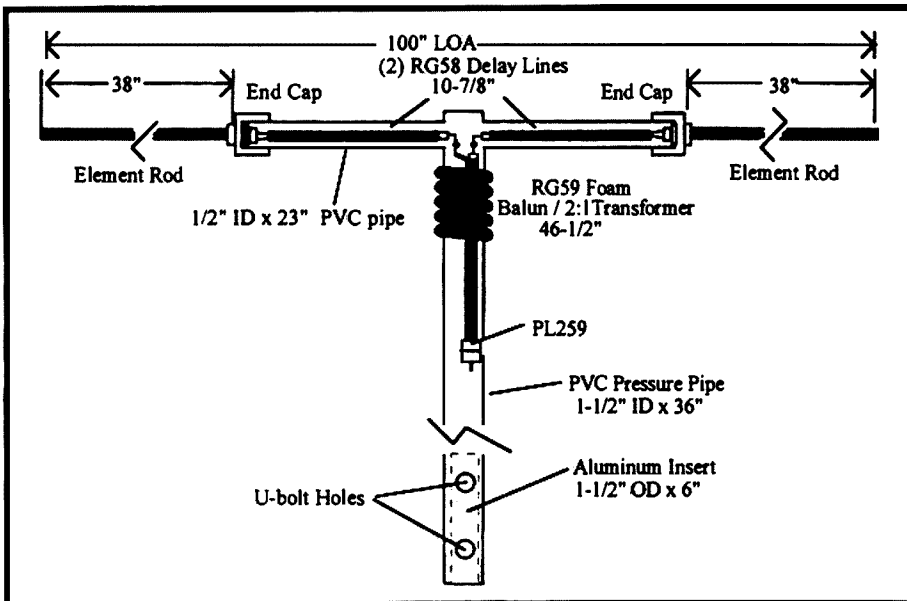


Fig 1 - Two metre extended double zepp antenna.

PVC Extended Double Zepp

The extended double zepp is a useful two metre side-mount antenna. A simple to construct version using PVC pipe was published in the Summer 1997 edition of *Communications Quarterly*. The author was Rick Littlefield K1BQT.

The antenna is intended to be side mounted and should be oriented so that the resulting null due to the presence of the mast is not in a wanted direction. The parts are all readily obtainable, although substitutions for those locally available will be required. Plumbing supplies, coaxial cable, aluminium rod and hardware are all reasonably universal so that substitutions should not be difficult.

Antenna construction is shown in Fig 1. The delay lines are shown in Fig 2 and were made out of Radio Shack/Tandy RG58 coaxial cable. The centre section housing the delay lines is a 23 inch long piece of 1/2 inch ID PVC water pipe. The support is a 36 inch long piece of 1.5 inch ID PVC pressure pipe. An insert of 1.5 inch OD aluminium tube is used at the

mounting point to resist crushing by the U bolt.

Element tips are made of 3/16th inch aluminium rod. These are threaded for mounting. The mounting of these rods onto the ends of the centre section of PVC pipe and the connection of the delay lines is shown in Fig 3. The balun and feedline connection are shown in Fig 4. The balun and 75 ohm transformer are made from a 46.5 inch length of 75 ohm RG59 foam cable.

Some substitution may be necessary to use locally available plumbing but a close copy of the design should be possible. The author obtained a 1.1:1 VSWR at resonance and less than 1.5:1 VSWR throughout the band.

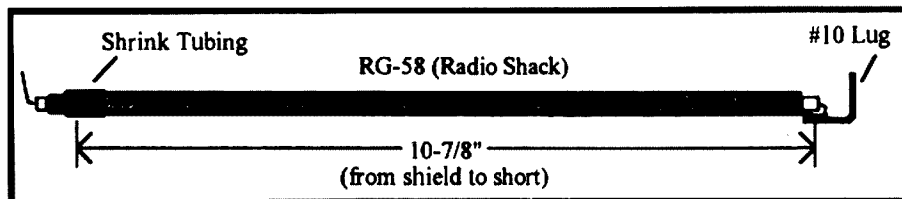


Fig 2 - Delay line construction detail.

QRP Transceiver

A neat QRP transceiver combination appeared in *CQ*, August 1997. The article appeared in the *World of Ideas* column of Dave Ingram K4TWJ. The transceiver was composed of the Micronaut Transmitter of Dave K4TWJ, originally published in *CQ*, March 1997, and the MRX-40 receiver of Steve Bornstein K8IDN. The MRX-40 is a kit produced by Steve K8IDN and the circuit was published in *CQ*, August 1997 and *QST*, September 1997.

The receiver circuit is shown in Fig 5 and the transmitter is shown in Fig 6. The design is for 40 metres but can be modified for other bands. Send/receive switching is up to the constructor. The receiver tuned circuit for 30 metre operation was given as: C1 = 68 pF, C2 = 330 pF, and L1 = 4.7 microhenry. Kits with small circuit boards are available in the USA.

The oscillator signal from the MRX-40 is picked off pin seven of the NE612 and coupled to the PN2222 base by a 47 pF capacitor. For transmitter operation with 12 volts, the PN2222 emitter resistor may need to be reduced from 120 to around 70 ohms and you may need to parallel two PN2222s. Output for a nine volt supply should be around 100 milliwatts, rising to 350 milliwatts with the 12 volt modification.

Remember this is an experimental radio and some tweaking and component changes may be needed in transceiver operation.

Return Loss Bridge

Return loss is a different way of expressing SWR. Return loss is the power taken by the load and is given in decibels. A perfect match or 1:1 SWR sees zero reflected power and the power is absorbed by the load which gives infinite return loss. A 1.22:1 SWR gives 20 dB return loss and an infinite SWR gives 0 dB return loss. A 2:1 SWR is a return loss of 9.5 dB.

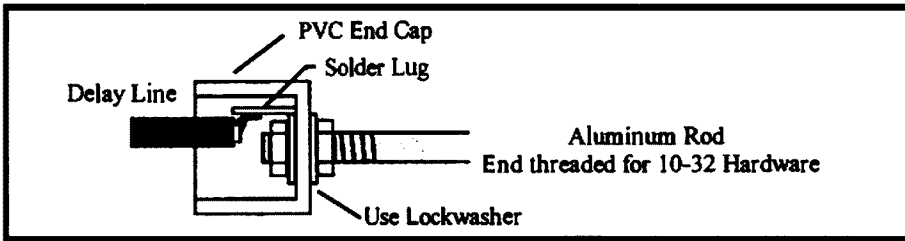


Fig 3 - Element mounting detail.

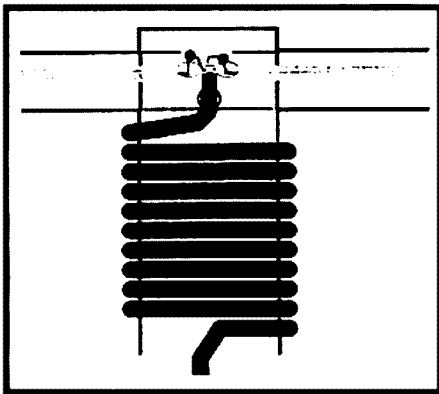


Fig 4 - Balun choke and feedline connection detail.

Return loss is measured using a bridge, together with a detector, attenuators and a signal source. Measurements can be made at low power and on receiver inputs as well as on cables and antennas. Thus, return loss is often preferable to the usual SWR technique. SWR can be monitored continuously during transmission, however.

A return loss bridge was described in *QST*, September 1997 by Jim Ford N6JF. It is simple to construct and is capable of good performance, provided small

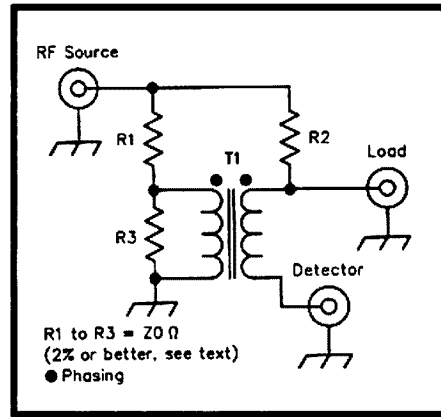


Fig 7 - Return loss bridge schematic.

components with zero length leads are used in construction. The circuit is given in Fig 7. The transformer is 10 turns No 30 AWG bifilar wound on an Amidon FT-23-77 core. The resistors should be 1% tolerance and be of carbon composition or metal film construction.

One technique to get 50 ohm resistors is to use parallel surface mount 100 ohm resistors. This gives short leads and a 50 ohm resistance.

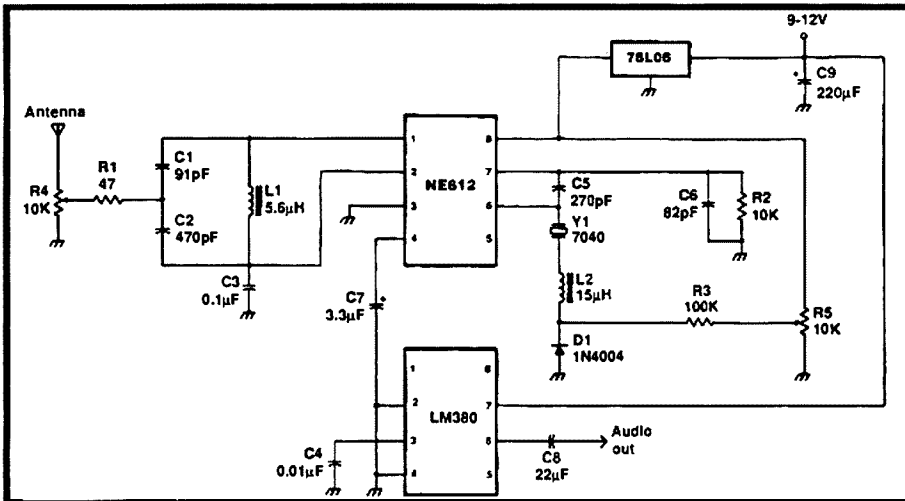
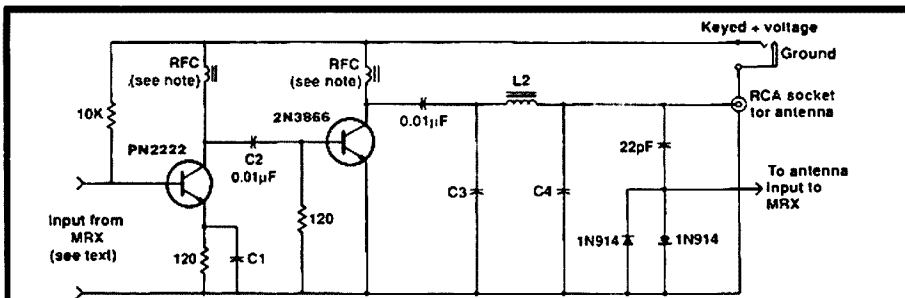


Fig 5 - MRX-40 receiver.



Coil and Capacitor Data for The Micronaut

Band (m)	C1 (pFd)	C3 (pFd)	C4 (pFd)	L2 Inductance (uMy)
20	270	270	270	12 turns #28 or #30 on T 50:2 core 720
30	330	330	330	13 turns #28 or #30 on T 50:2 core 980
40	470	470	470	16 turns #28 or #30 on T 50:2 core 1280
80	750	750	750	34 turns #30 or #32 on T 50:2 core 5780

Fig 6 - Micronaut transmitter adaptation for operation with MRX-40.

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US Amateurs Soon Free to Roam in Europe

Amateurs from the United States will soon be able to travel in Europe and operate on the air without needing to apply for reciprocal licences.

The European Conference of Postal and Telecommunications Administrations (CEPT) has granted a US government request to participate in the European "guest license" arrangements which prevail in most European countries, according to the American Radio Relay League's *ARRL Letter* of 13 February.

Holders of a CEPT-recognised amateur licence can operate in CEPT guest licence-participating countries, under CEPT Recommendation T/R 61-01, without having to apply for a formal reciprocal licence.

In the third quarter of last year, the US Federal Communications Commission (FCC) proposed amending the Amateur Radio rules in that country to make it easier for amateurs holding a CEPT licence or an International Amateur Radio Permit (IARP) to operate during short visits to the US.

Under the proposed arrangements, a US Technician licence would be recognised as a CEPT Class 2, VHF-only, licence with full privileges above 30 MHz. Full privileges on HF and VHF would be allowed to holders of US Tech Plus through Extra Class licences. US Novices would not be eligible, according to the *ARRL Letter*.

The ARRL has been pushing for CEPT recognition since 1991.

The WIA has been advocating CEPT guest licence arrangements for overseas amateurs visiting Australia, and Australian amateurs visiting CEPT countries, for a similar period. It is an 'active' issue being pursued with the Australian Communications Authority by the WIA-ACALiaison Team.

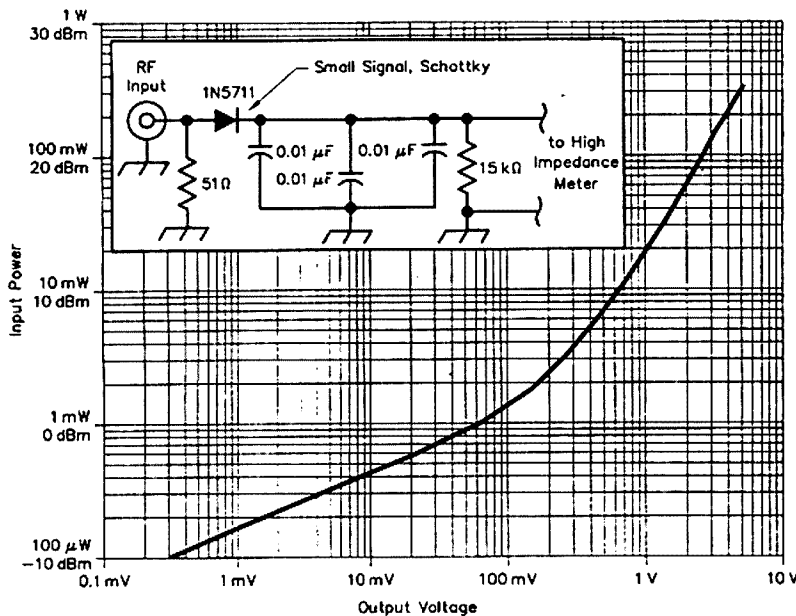


Fig 8 - The diode detector and calibration curve taken at 30 MHz.

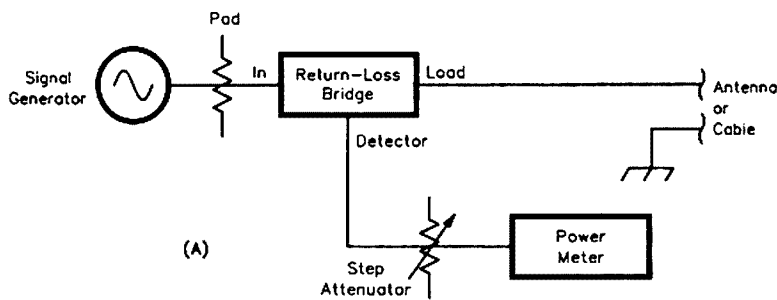


Fig 9 - A return loss bridge test set-up to measure an antenna system or coax loss.

The author's diode detector, together with a calibration curve taken at 30 MHz, is given in Fig 8. A typical return loss bridge test set-up to measure an antenna system or coax loss is shown in Fig 9. The reference reading is taken with the load open or short circuited. The bridge, when the load is perfectly matched, should be balanced and the return loss should be infinite; however, you should be able to achieve a better than 20 dB return loss. 30 dB of return loss is an SWR of 1.07:1.

A table of return loss and SWR is given in Table 1. The reference voltage for an open or short circuit load is given as 1 and the reading obtained in your test set-up is scaled accordingly.

Table 1 - Return Loss and SWR

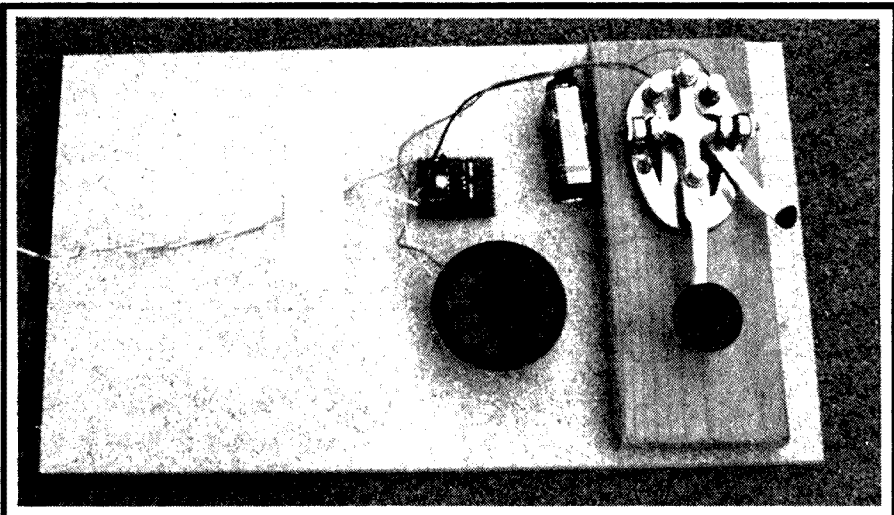
Detector Voltage Ref to O/C or S/C.	Return Loss in dB	SWR
0.00	infin	1.00
0.05	26.4	1.10
0.1	20.0	1.22
0.15	16.5	1.35
0.2	14.0	1.50
0.25	12.0	1.67
0.3	10.5	1.86
0.33	9.5	2.00
0.4	8.0	2.33
0.5	6.0	3.00
0.75	2.5	7.00
0.9	0.9	19.00
0.95	0.4	39.00
1.0	0	infin

ar

Novice Notes

A Two-Way Morse Practice Set

Peter Parker VK1PK
 7/1 Garran Place, Garran ACT 2605
 E-mail: parkerp@pcug.org.au
 Novice Notes Online: <http://www.pcug.org.au/~parkerp/nonline.htm>



One of the two-way Morse stations.

Introduction

The first step to learning Morse is to be able to memorise the sounds of all letters and numbers. This can be accomplished with the help of Morse practice tapes or classes. Once you know all the characters, the WIA Morse practice broadcasts and/or continuous VHF Morse beacons can be used to increase your receiving speed.

Additional practice is best obtained by having Morse (CW) contacts on the HF bands. However, many use shyness as an excuse to not use Morse on the air. Others are restricted by their licence grade to VHF/UHF operation or may not possess HF equipment. For such people, this Morse practice set is the next best thing to actual CW operating because it allows you to have two-way Morse 'contacts' with a person in another room or even an adjoining property. The advantage of this sort of practice is that one learns operating skills and procedure as well as sending technique.

How It Works

The system consists of a pair of Morse practice oscillators connected by a piece of two-conductor cable (Fig 1). Pressing the key on one unit produces a sound in both units. The receiving operator can interrupt the sending operator at any time by pressing the key. This is just like the "break-in" CW facility provided in most modern HF transceivers and makes this project particularly suitable for already licensed amateurs wishing to brush up their operating technique for a forthcoming DXpedition or contest. No originality is claimed for the idea, which is described in Reference 1.

Though two stations are shown here, additional sets can easily be wired in parallel. Such multi-station operation has a number of advantages. For example, it could allow a small class to have DX or net-style 'contacts' - thus simulating multi-operator or competitive operation. In such a situation, the class trainer could pretend to be a rare DX



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PERTH - Model

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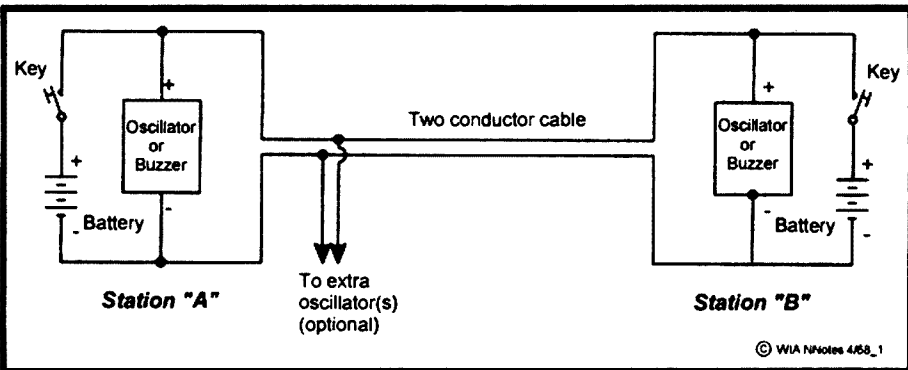


Fig 1 - Two-way Morse practice set.

station calling CQ and students could compete with one another to make the first 'contact'.

The Oscillator/Buzzer

You will notice Figure 1 specifies that either an oscillator or buzzer can be used as the sound making device. A system using buzzers is cheap and simple (buzzers being available off the shelf), but transistor oscillators produce a nicer sound and cope better with faster speeds.

Transistor oscillators are commercially available in kit form (see later) or can be built from scratch. The kit is perhaps best if you have to buy all parts new. However, those with deep junk boxes would save by using available components instead. The remainder of this article provides details of an oscillator that you can build at home. Even if you have to buy the Morse keys new, a two-station set should cost between thirty and forty dollars to duplicate.

Construction

Fig 2 shows the circuit used in the prototype. Two 'stations' are shown, though more can be added if required. The oscillator in each station uses a standard 555 timer chip. As is apparent from the photograph, each oscillator is built on a piece of matrix board about 30-40 mm square. Vero-type strip board could be used instead, but component placement will be more difficult because of the need to solder components to the right tracks. The 0.1 µF capacitors are polyester or disc ceramic, while the 100 µF capacitors can be tantalum or electrolytic. If you are on a tight budget, the speaker, battery snap and (possibly) some resistors and capacitors can be salvaged from a broken transistor radio -

component values are not particularly critical.

A speaker of any size can be used. For economy and compactness, a size of 38 to 76 mm is recommended. You may care to add a headphone socket if you intend to use the oscillator to practice while not disturbing others. A socket with an in-built switch to silence the speaker when the headphones are plugged in is recommended.

Each station needs between 6 and 12 volts to operate. Nine volt batteries were used in the prototype. However, if you intend to use the set a lot, a bank of AA, C or D-sized cells in a battery holder will provide more economical operation. Because all units are 'master stations' with their own batteries, each unit can double as a stand-alone code practice oscillator when solitary practice is required. If this feature is desired, use two-conductor plugs and sockets (3.5

Keys and Kits

While Morse can be sent on an improvised key made from a hacksaw blade or piece of tinplate, it is better to use a proper key. Keys can either be bought new or second hand. The key pictured was picked up for \$5.00 from a weekend trash and treasure sale. A book and a code practice oscillator were thrown in as extras. Dick Smith Electronics sells a Morse key for \$9.95 (cat no D-7105). Also available is a Funway Two code practice oscillator kit (supplied with key) for \$18.50 (cat K-2623). These oscillators work just as well as the 555 oscillator described, and are a good choice for the person who prefers to buy a kit rather than obtaining the parts separately. The number of kits required depends on the number of stations used.

mm mono connectors are ideal) to allow the connecting cable to be easily disconnected.

Testing and Operation

Check all oscillators individually before connecting them together. Pressing the key should produce a tone that is pleasant to listen to and of sufficient loudness. Vary the 10 k and 270 ohm resistors to set pitch and volume respectively.

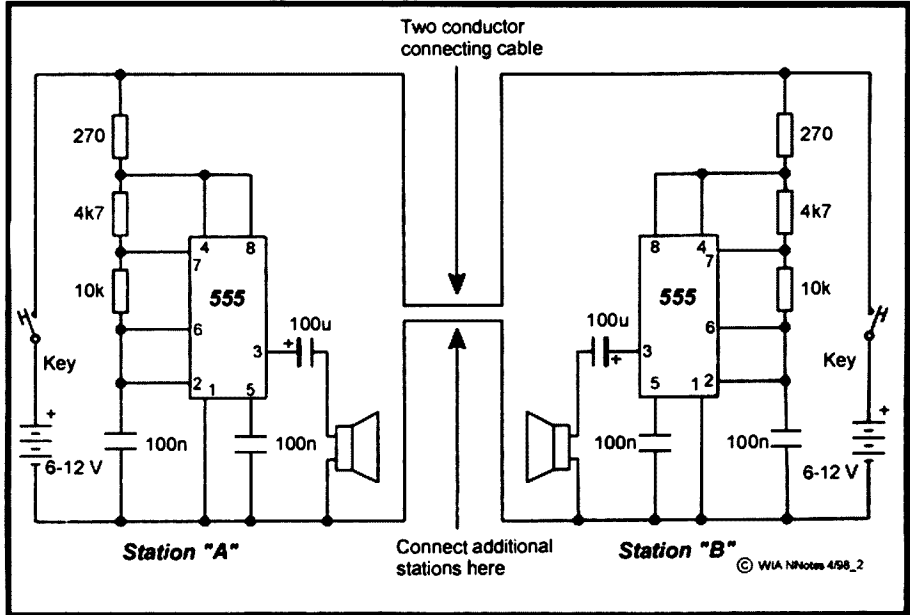


Fig 2 - Schematic diagram of a two-way Morse practice set.

Once satisfied with the performance of each station as a stand-alone unit, wire all units together with two-conductor cable. As it is carrying only DC, the cable need not be shielded. The thin type used for wiring up hi-fi speakers is ideal.

Keying one station should activate all oscillators. If not, check that the polarity of the wires to each station is correct. Use enough wire to separate the stations far enough so that the operators can neither see nor hear one another, so that Morse becomes the sole medium of communication.

The system as presented here is fairly basic. However, various 'bells and whistles' can be added to make operating more comfortable, or more like real live CW operation.

For example, many operators become fatigued when subjected to a tone of uniform pitch for long periods. Replacing the 10 k resistor with a variable resistor (say 20 to 50 k) allows the pitch of each oscillator to be set to the operator's taste.

To make practice sessions more like on-air operating, many things could be done. For example, a resistor in series with a station's key would reduce the loudness of that person's 'signal' in the other people's stations, thus simulating low power (QRP) transmission. If a means could be found to vary supply voltage to each station automatically (say from 4 to 12 volts), over a period of several minutes, signal fading (QSB) would be the result. These effects would of course be made even more realistic by using an audio mixer to introduce real interference (either man-made or natural) from either a continuous loop tape player, digital voice recorder or HF receiver. These embellishments are not necessary for the casual learner, but could be useful to test an operator's ability to pass messages under adverse receiving conditions.

The above ideas have not been tried by the author, but are merely proffered as examples of how a very simple project such as this can become as elaborate as the builder desires.

References

1. Williams N, Rowe J. *Basic Electronics*. Sungrave 1979, p85.

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Morse Practice Transmissions

The following services are provided by individuals, clubs or WIA Divisions to assist people learning Morse.

WIA MORSE PRACTICE TRANSMISSIONS

VK2BWI	Nightly at 2000 local on 3550 kHz
VK2RCW	Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm
VK3COD	Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz
VK3RCW	Continuous on 145.650 MHz, 5 wpm, 10 wpm
VK4WIT	Monday at 0930 UTC on 3535 kHz
VK4WCH	Wednesday at 1000 UTC on 3535 kHz
VK4AV	Thursday at 0930 UTC on 3535 kHz
VK4WIS	Sunday at 0930 UTC on 3535 kHz
VK5AWI	Nightly at 2030 local on 3550 kHz
VK5VF	Continuous on 145.650 MHz, 5 wpm to 12 wpm
VK6RCW	Continuous on 147.375 MHz, 3 wpm to 12 wpm
VK6WIA	Monday to Thursday at 2000 local on 3.555 MHz and Tuesday at 2000 local on 146.700 MHz

In addition to the above transmissions, fairly slow Morse can be heard from aircraft beacons operating in the 150 – 450 kHz range. Because tone-modulated AM transmitters are used, these signals can be received on an AM receiver with no beat frequency oscillator (BFO).

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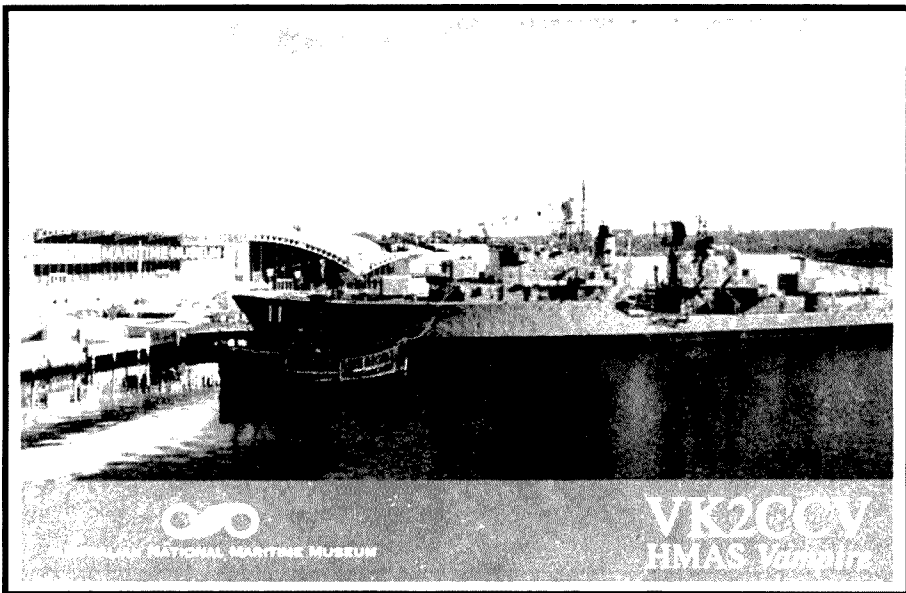


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■ Maritime Vampire – VK2CCV

Casey Schreuder VK2CWS
33 Gwydir Street
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The VK2CCV QSL card.

When the Royal Australian Navy commissioned the three *Daring Class* destroyers HMAS *Voyager*, HMAS *Vendetta* and HMAS *Vampire*, little did it expect one of the three, HMAS *Vampire*, to end up as a museum ship.

Vampire was commissioned from 1959 until 1986, and lent to the Australian National Maritime Museum in Darling Harbour, Sydney in 1991.

On 9 April 1997, the Hon Senator Bronwyn Bishop, Minister for Defence, Industry, Science and Personnel, officially presented HMAS *Vampire* to the Maritime Museum in the presence of Rear Admiral David Campbell, who, at the presentation, gave the ship official permission to fly the "White Ensign"; this is a rare thing as the "White Ensign" is only flown by commissioned ships!

Vampire has always been a friendly and happy ship. Her guns were never fired in anger, and she became a training ship in 1980. Previously she escorted HMAS *Sydney* on two voyages to Vietnam and was involved in patrol

duties during the Malaya-Indonesia confrontation in the sixties.

Members of the Royal Naval Amateur Radio Society, RNARS, became Volunteer Guides on the ship in 1992. In 1994 they started operating VK2CCV, the amateur radio station on board. The

members involved themselves with the restoration of *Vampire* to her former glory and, thanks to the generosity of the Royal Australian Navy, the Comms Centre is now almost fully equipped with B40, B4I, B50 and teletype receivers, and associated equipment. Recently, several whip antennas were obtained from the RAN and will be erected soon.

Radio amateurs are invited to visit us, especially on Saturdays when VK2CCV is on air from the Bridge Wireless Office from approximately 10 am local time until about 3 pm.

Alongside *Vampire* is the Russian submarine "Scorpion", a Foxtrot Class submarine, fully equipped with radio transmitters, receivers, sonar and radar, etc (bring your Russian dictionary!).

All contacts with VK2CCV will be confirmed with a beautiful QSL Card with a photograph of the *Vampire*.

Apart from VK2CCV on *Vampire*, RNARS members also operate stations on board *Castlemaine* VK3RAN in Melbourne and *Diamantina* VK4RAN in Brisbane, as well as the club stations VK1RAN in Canberra, VK5RAN in Adelaide and VK6RAN in Perth. Station VK2CC operates from the Cadet Training Centre on Snapper Island.

Amateurs with a professional maritime background are invited to become members of the RNARS, a world-wide organisation with over 3000 members.

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VK QSL BUREAUX

The official list of VK QSL Bureaux. All are Inwards and Outwards unless otherwise stated.

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VK8	C/o H G Andersson VK8HA Box 619 HUMPTY DOO NT 0836
VK9/VK0	C/o Neil Penfold VK6NE 2 Moss Court KINGSLEY WA 6026

■ History

A Short History of Electronic Communication

58 Prospect Terrace,
St Lucia QLD 4067

Most of us associate the twentieth century as the century of the telephone, radio, and mass electronic communication. Communication by electrical means, however, has a much longer history than most people believe.

Histories are particular interpretations made from what the writer remembers and garners from whatever sources are available at the time. Frequently those sources are anything but primary and depend, in turn, on other authors, their agendas, and the way they have construed evidence available to them. In the process chain many omissions, commissions, and distortions can creep in.

Technological innovations are especially vulnerable to such errors as, in the heat of creation, the significance of innovation may go unrecognised and unrecorded until much later. Presented below is a potted version culled from my half-century of dabbling in electronics, and delving into a few books from a university library.

One problem for technological historians is determining who did what first. Popular attribution is often a matter of chance, or a manipulation by those who have political or commercial reasons to have it favour a particular name. Another problem is sorting out who was first with an idea. This is sometimes not easy, as it often happens that many people have the same idea at about the same time.

A word used in some literature is "Zeitgeist," which conveys a sense of the time being right for an idea. This is particularly true for technological inventions since there are usually many precursors that must be available before

the imaginative and technical leap can be made. New inventions also depend on the availability of supporting technology, materials, and services. The telephone was not a possibility without wire, insulators, and the idea of acoustic modulation of current flow.

Once the materials and supporting technology become available, the next step may be obvious to many, and the race is on to claim fortune and fame. In the case of the telephone, there was certainly more than one person, other than Bell, trying to develop such a device and, as we see later, who got there first remains debatable. The same goes for radio and television as there are many nominations for inventorhood in the literature for both categories. No doubt there are many names either not recorded, or hidden away in obscure reports, perhaps in languages other than those of mainstream science that deserve some honour. This paper, therefore, is one of supposition. Given that my information is approximately correct, and my scholarship sufficient, the following is what happened, give or take a few simplifications.

Telegraph

The first suggestion that the flow of electricity through wire could be used for purposes of communicating appears to have been made anonymously in a Scottish magazine in 1753. Around the turn of that century, Von Sommering of Munich demonstrated how a signal sent over 600 metres of wire could release bubbles of gas from terminating electrodes at the far end. He proposed the use of a 36-wire system for signalling.

Francis Ronalds started experimenting and constructed what is

probably the first successful telegraphic system in 1816. In 1823 he tried to convince the British Admiralty of the practical possibilities of his system. The Admiralty was then using the Napoleonic system of semaphore towers on hilltops every ten or so miles to carry intelligence between Portsmouth and London. The Admiralty, in its wisdom, advised that their system was sufficient and that an electrical telegraph was wholly unnecessary. Ronalds, somewhat discouraged, gave up the whole idea.

A few years later, Cooke, a retired army officer ex-India, who had been impressed by Ronalds' early demonstrations, managed to persuade the famous Professor Wheatstone to join him to develop a telegraphic system. At that time, railways were rapidly extending over many countries. The need and potential for a telegraph as an adjunct to the rail system was now manifest and Cooke saw this as a chance to win fame and fortune.

He was not the only person to see the commercial possibilities of a workable telegraph system and many inventors were at work on the idea. The 1837 Cooke-Wheatstone system used a version of the Wheatstone galvanometer and five wires. Letters were read by reference to the positions of pairs of needles on a diamond shaped scale and the sending operator had to use two hands to twist two levers into appropriate positions. An application by Cooke and Wheatstone for a patent, now seen as a lucrative prize, was opposed unsuccessfully by Edward Davy, a surgeon, who had demonstrated a successful system in the same year.

Disappointed at losing out on the patent, Davy emigrated to Australia soon after. He did, however, make one significant invention, the "electrical renewer" or relay. This enabled lines to be extended without resort to high transmitting voltages. (The insertion of relays into a line, incidentally, when used with the Morse-code system of signalling, made "reading the mail", by operators along the way listening to the chatter of these relays, a time honoured activity.)

Samuel Morse, a teacher of painting and sculpture at an American university, seemed to be a technical tinkerer and,

among other things, studied the electrical properties of wire of different lengths. On a return boat trip from Europe, after a conversation with another passenger, he conceived of a simple serial code for signalling using only one line. With assistance from Alfred Vail his system was quickly adopted by the American telegraph companies and became a universal method of signalling.

Morse's original code was somewhat different from the system that today bears his name and was intended to be read from ink marks on paper. One can assume that it was because operators were able to read the clicking electromagnet directly and dispense with paper tape, that reading the code by sound became the established way of operating.

Although the Morse-code system flourished, so did the Cooke-Wheatstone system, and developments of it continued also. When fed with pre-punched message tapes, by 1900 the Wheatstone-Creed system was capable of handling up to 600 words per minute, not appreciably less than present-day computer/modem systems.

The Telephone

From early in the 19th century it had been noted that acoustical effects could be produced with the aid of electromagnetism. In 1837 Page produced a "galvanic music" effect and, over the next thirty years or so, many other experimenters investigated the acoustical effects produced by electrical means.

A G Bell is credited with being the inventor of the telephone. His original intent was in developing his "Autograph" or harmonic telegraph, a multiplex system of tuned metal reeds which he hoped would enable up to thirty messages to be passed down one line. In 1875 Bell realised that if he could vary intensity of the sound coming from his singing reeds he might be able to create "electric speech." It took nearly a year of fiddling before something approaching an intelligible human voice could be transmitted and reproduced.

Many accounts exist of the first spoken words to be heard via wire. A common story is that the first words were "*Mr Watson, come here, I want (to see) you*". This account is given in *The*

People's Almanac by Wallechinsky and Wallace, has been popularised by the Hollywood movie, and is supported, with the addition as bracketed, by Bell's own notebook. Watson recorded it simply as "*Mr Watson I want you.*"

However, according to Bell's own paper presented to the American Academy of Arts and Sciences in May 1876, his assistant was sent into another room to note the effect that might be produced by articulated speech. He suggested that his first utterance was "*Do you understand what I say?*" and that, after a pause, the instrument in his hand articulated the words "*Yes; I understand you perfectly.*" Bell reports that a number of familiar quotations were tried, including "*What hath God wrought...*"

As it always happens, good ideas are rarely unique to one person. Elisha Gray, who was engaged in litigation against Bell over the harmonic telegraph, also had visions of a system that could transmit music and speech over wire. Gray applied for a caveat (literally a legal device that establishes the priority of an idea) on the same day and at the same patent office as Bell's application for what was to be known as the "telephone." There was considerable argument later as to who actually had priority on the concepts involved.

The coincidence of the patent applications seems remarkable also, but the Bell and Gray interests (Western Electric) had been monitoring each other for some time and had been mindful of the problems involved of jumping in first without a fully developed patent specification. From all accounts, at the date of application neither Bell nor Gray had an actual working system. It appears that Bell's first really successful apparatus, achieved only several months after the patent application, actually used the same microphone idea as Gray, a membrane-driven vertical rod dipping in acid water, rather than the electromagnetic transducer described in his 1876 paper. Bell clearly won the race, but perhaps not strictly as a sole genius, or according to the specifications in the patent.

The Bell telephone, unlike many of its predecessor communication devices, did not sit around waiting for acceptance. By

1879 telephone exchanges were already in place in many cities. By 1881 Bell Telephone, and its rivals such as the Edison Telephone Company, had 100,000 subscribers in USA. There were approximately 2,500 telephones in Paris. The UK lagged considerably behind the USA with internecine battles between the various telephone companies and the British Post Office, which held a legislative whip over the whole business to protect their telegraphic trade. Finally, the mess in the UK was solved by nationalisation in 1911 and the telephone took off. By 1913 some 480 million telephone calls were registered as having been made in the British Isles.

While the general population seems to have taken to the telephone, businesses were slower to accept its capabilities fully. Here the lag for public acceptance was considerable longer. Telephones were certainly available in most houses of business, but use was formal and restricted to arranging appointments and confirmations. Important transactions were carried out only in face-to-face situations.

Perhaps the problem was that it took considerable time for the culture to evolve a way of talking without the need for the physical rituals we normally use in making business transactions. Traditionally, one scrutinises the seller's face before making an agreement. Trading without visual contact, and without formalised telephone protocols design to affirm trust, leaves either or both participants vulnerable.

In reflection, Bell's stimulus for the idea of "electric speech," the harmonic telegraph, was in fact a carrier-wave system, and one that was to re-appear in modern guise some 50 years later as a telephone multiplexing system.

Radio Wave Communication

The next step in communication was to do away with the necessity of stringing wires between the two participant stations. During the American Civil War, telegraphic communication had become a vital component of the business of war. Large rivers, however, presented a problem as cabling and insulation was insufficient to allow cross-river connections.

One trick was to run a cable along

each bank for some distance and earth the far end. By using the cross-river conductance an electrical bridge could be established sufficient for communication. It seems possible that the engineers found some direct inductive coupling effects between wires in these experiments.

Preece, a British Post Office engineer, discovered this effect in 1884. Inductive effects were found in wires up to 80 ft from buried cables underneath. Next year experiments were carried out with inductive loops. It was found possible to transmit signals over several hundred metres.

Although the possibility of electromagnetic-wave phenomena at low frequencies had been predicted by Maxwell some years before, confirmation had to wait for Hertz's experiments in 1888.

Another early researcher was Rutherford who, soon after his arrival in Cambridge in 1895 from New Zealand, was able to send and detect signals up to 1 km. Another experimenter was Oliver Lodge who introduced the idea of syntony, or the use of tuned circuits to constrain oscillations and radiation to a single frequency. Garratt (*The Early History of Radio from Faraday to Marconi, 1994*) reports that, in August 1894, Lodge, using a Muirhead telegraphic key and inker, demonstrated the transmission of Morse over a distance of about 60 metres through several brick walls with his Hertzian apparatus. This was possibly the first demonstration of a message, albeit brief, without wires.

Lodge, however, apparently saw the whole matter as a phenomenon of theoretical interest only. It was left to Marconi to claim the title "Father of radio" after he was allowed to demonstrate his experimental apparatus to Preece, the Post Office, and the general public on Salisbury Plain in 1896. Although at first Preece was not impressed, in later trials a good antenna system added to the apparatus enabled Marconi to convince the public that wireless telegraphy was possible.

Whereas Rutherford and other scientists were interested only in the scientific aspects of radio waves, Marconi saw that commercial advantage

could be gained from such phenomena. Since it was clear to Marconi that England was the place to advance his wireless system, it was there that he chose to conduct his later experiments, no doubt with a view to impress rather than advance knowledge particularly.

While Marconi was the first to assemble and operate a practical wireless system, there is some doubt as to his technical understanding of radio-wave phenomenon, in particular the idea of syntony, or radiation on a precise frequency. According to Garratt, Marconi's early apparatus possessed two fundamental faults and probably radiated significantly in two parts of the electromagnetic spectra, those being around 2 to 3 MHz, and around 500 to 800 MHz.

Nonetheless, it was Marconi who had the essential combination of drive for experimentation, commercial acumen, and money, to turn the Hertzian phenomenon into a practical utility for all.

Despite the success of his first demonstrations, the Post Office was able to block at least some of Marconi's experiments in the fear that the wireless form of telegraphy would infringe its monopoly of the electrical communication medium.

One area which the Post Office clearly could not object to as infringing its monopoly was ship-to-ship and ship-to-shore communication. In naval communication the advantage of wireless was clear (almost too clear, as in America the US navy tried to have the entire radio-frequency spectrum reserved for defence purposes only, and the British Admiralty probably would have attempted that also if they thought they could have got away with it). However, several demonstrations of the public usefulness of wireless telegraphy had already created an awareness of the general usefulness of radio waves.

In 1898, a wireless connection had only just been set up between the East Goodwin lightship and the shore at a distance of twelve miles when the lightship was struck by a steamer. Quick communication enabled all lives to be saved.

In 1912, the world was alerted to the "Titanic" tragedy through wireless communication between the stricken

ship and the "Carpathia". The radio operator on the "Carpathia", David Sarnoff, stayed on the job for a straight 72 hours. Sarnoff later moved on to become a founder of a small company which called itself the Radio Corporation of America.

Apart from growing commercial interests in the art of radio, and the demonstration by Fessenden in 1906 by the broadcast of music to show that radio waves could carry more than just a Morse-code signal, there was a growing body of interested amateur experimenters.

It was the existence, and the voice, of this myriad of amateurs that helped dissuade the American Congress from acceding to Navy demands for exclusive use of the radio bands, for amateurs were proliferating so rapidly that it would have been almost impossible to suppress them. The American Radio Relay League also conducted some intensive lobbying, but commercial interests were also powerful in the persuading game. Legislation was soon passed to control who used the radio waves. Amateur experimenters found that they, not too surprisingly, had been dealt cards from the bottom of the pack.

In a paper presented to the Institute of Radio Engineers in 1920, Alexanderson, then chief engineer for RCA, explained that, to span an ocean, a wave length must be used such that the distance did not exceed 500 times the length of the wave. Thus, to reach across the Atlantic, a wave length of 10,000 metres (or 30 kHz) must be used.

At that time, carrier wave signals were generated by mechanical alternators, not unlike a generator found in a power station, only these were run at a very high speed to generate AC outputs of up to 30,000 Hz. To be effective at these wave lengths, antennas of up to several miles in length were required. Having the advice of engineers such as Alexanderson that wave lengths shorter than 100 metres were of no use to anyone, amateurs were relegated to the shorter wavelengths of 200 metres and below. Officialdom, thus, was confident that the pesky amateurs would not be able to get out of their own back yards with a signal. Nor would they be a problem confined to such an unusable part of the spectrum.

Not daunted, amateurs started to develop compact equipment based on the new vacuum-tube amplifiers using the De Forest Audion valve and its successors. In 1921 amateurs in America started trans-Atlantic tests. Was there any possibility that someone on the other side would hear them?

Government and commercial wireless stations had already shown some success in the wavelength range suggested by Alexanderson. Transatlantic communication by wireless, thus, was no big deal. But this was brute-force radio, not the kind a back-yard experimenter could construct.

When amateur transmissions began, reports started to pour in from the other side of the ocean. There was indeed some sort of communication path, but it was irregular. It went in and out with the position of the Sun. Shorter wavelengths were tried and results improved dramatically. Short-wave communication had been discovered!

Soon it was realised that a path depended on ionised particles high above the earth. Transmission over long distances depended on reflection between the earth and the ionosphere, the signal sometimes making multiple hops across the surface of the earth to drop down, conveniently, one hoped, in the vicinity of a receiving station.

Today, far from being restricted to backyards, amateurs achieve inter-continental communication sometimes with hand-held devices. Many of today's amateurs do this comfortably through one of the many amateur-sponsored satellite repeaters sitting in high orbits around the earth.

By the mid-1920s, many radio broadcast stations were in operation. In 1926 the American radio industry had sales of over half a billion dollars. Of course, once the low and medium-frequencies became full, commercial interests turned to wavelengths less than 200 metres and amateurs were again shoved off to nether regions.

Pictures by Wire

Television, like the telephone, had a long gestation. Ideas of transmitting moving pictures date back to the 1890s. The idea of sending a picture composite down a wire was as old as telegraphy.

Around the same time as Cooke and Wheatstone were developing their telegraphic system, others were contemplating the means of sending a direct image off paper. Alexander Bain appears to have been first off the mark with a mechanical scanning device. A patent for this facsimile apparatus was taken out in 1843.

In 1862, Florence born Abbe Caselli, using synchronising pendulums for both scanning and receiving in an apparatus he called a pantelegraphe, was able to transmit a reasonable facsimile over a 400 km path. By the turn of the century reasonable pictures could be received from a telephone line. Facsimile, however, stayed a curiosity. It was not good enough for written copy. The great pictorial age of the press had not yet come and there seemed little use for transmitting still pictures.

Up to this time, efforts had been concentrated on sending a fixed image down a single line. For this, it was obvious that some type of scanning process had to be used. For images that were to be transmitted and viewed in approximately real time it was apparent that a different approach was needed.

In 1908, an Englishman named Bidwell proposed in a letter to *Nature* that an array of 90,000 photoelectric cells would enable a picture of reasonable quality to be transmitted. This system would follow the principle of the eye in that every element would be permanently wired to its corresponding element at the receiving end. His notion was to use a 90,000-wire cable to interconnect stations 100 miles apart. In the penultimate sentence of the letter, with gasping audacity, he suggested the use of the three-colour principle to present the final image in natural colours.

In responding to Bidwell's letter, Campbell-Swinton, an engineer well known to Preece and Marconi, poured some scorn on Bidwell's idea of a 90,000-wire link. However, he went on to suggest that the way to go might be to use the recently invented Braun cathode-ray oscilloscope. He was, in a way, reverting to the scanning idea, but at electronic rather than at mechanical speeds.

Campbell-Swinton took out a patent on this electronic system for television in

1908 and was active in early efforts to develop the necessary equipment for electronic television. Unfortunately he died in 1933 several years before his patent became a practical method of television.

The first broadcasts by the BBC in 1936 alternated between what was basically the Campbell-Swinton electronic system and Baird's mechanical system.

The story of Logie Baird, and the subsequent development of Baird's television system, is perhaps too well known to detail here. However, parallelism raises its head again. Before the turn of the century, Nipkow in Berlin had experimented with a spinning, perforated disk. In 1907, Rosing, at the Technological Institute in Petrograd, using the same idea as Campbell-Swinton, built a crude cathode-ray-tube receiver. One of Rosing's students was a Vladimir Zworykin. Later, Zworykin developed the crude cathode-ray tube into the two major devices needed for modern television, the kinescope picture tube, and the iconoscope camera tube. This was after he had migrated to America (and RCA).

Although the BBC has been often credited as offering the world's first television service in 1936, a network of five cities had been in operation several months earlier in time for the Berlin Olympics.

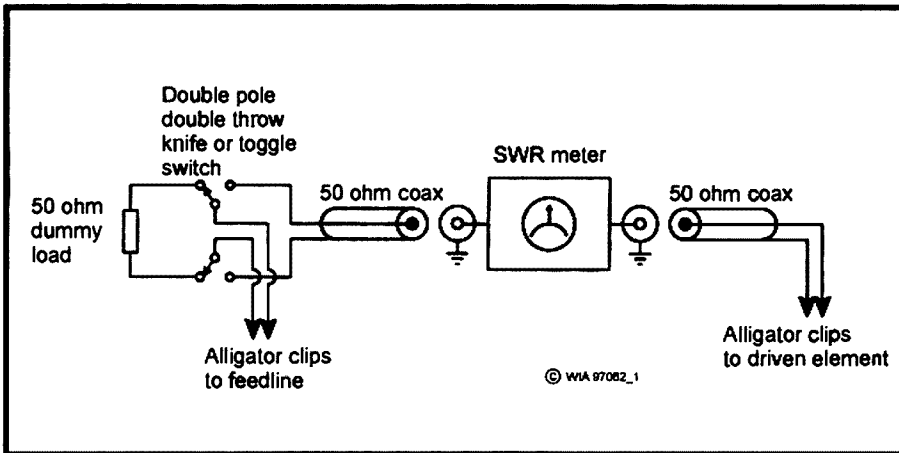
Television was put in abeyance in Europe by World War II until peace had been established. The BBC resumed a 405-line electronic service which was maintained for the next twenty years. Meanwhile America, after many internecine battles between rival systems, had settled on a 525-line NTSC standard and France had chosen an 819-line standard.

Currently, many countries have adopted a 625-line standard, but the matter is anything but settled. High-definition TV is in the wind, but standards for such, apparently, remain to be determined. To obtain sufficient bandwidth for the greatly expanded picture, current technology will have to be pushed to new limits, as ever it was with the introduction of each new standard. It remains to be seen which of the many systems will win out. ar

Antennas

Device to Adjust a Driven Element

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Kingsley WA 6026



The device to check a driven element.

Here's a device to enable one person to adjust a driven element for lowest SWR, be it a beam, quad, vertical or dipole.

On a flat board about 200 by 100 mm, mount an SWR meter either by a strap over the top or brackets. To the side of it mount either a two pole two position knife switch or, on a small front panel, a similar toggle switch.

Solder a 100 mm length of 50 ohm coax to a PL259 plug. To the other end solder two alligator clips. This is the connection to the Driven element and is plugged in to the "antenna" terminal on the SWR meter.

From the "transmitter" terminal on the meter fit a PL259 plug and short length

of cable. Connect the free end of the coax to one end of the knife or toggle switch.

To the other end of the switch make up and fit a five to 10 watt 50 ohm dummy load using suitable resistors. Solder two wires to the switch centre terminals and fit alligator clips to the ends. These are the connections to the feeder from the shack.

Set your rig to the frequency required and adjust the drive to about five watts to activate the SWR meter. Then hop up on the roof or stepladder and adjust the length of the driven element while isolating yourself with the switch to prevent RF burns.

I sat my device on the roof tiles to make the adjustments but, if your driven element is up higher, you could fit a couple of hooks to the board and hang it off the driven element.

Now, all I have to do is figure out how to adjust the reflector up in the air by myself for best front-to-back ratio. Anybody worked that one out yet? (I have actually adjusted it but had to call on the XYL's help to read the S meter and relay the results to me up on the roof by a cheap intercom and length of twin wire.)

Amateur Radio Technical Editor's Note

Many SWR meters give optimistic readings on low power, due to the non linearity of the diode rectifiers used. A final check at full power, perhaps in the shack, will confirm that all is optimised.

To make life easier for the transceiver or transmitter when using this technique, it is also recommended that an attenuator of at least 3 dB be inserted in the feedline at the transmitter end when testing to limit the SWR "seen" by the transmitter to 3:1 or better. The attenuator could consist of a long length of small diameter coax cable, eg RG-174.

Also, don't forget to listen on the frequency and identify when testing!

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■ Antennas

Quads and Their Spreaders

Don Jackson VK3DBB
55 Ryan Road
Pakenham VIC 3810

One of the complaints I have heard about quad antennas is related to the spreaders, and the difficulty and cost of obtaining the right material for them. I had the same problem too.

Several years ago I was presented with a pair of "Bandit" aluminium quad hubs, but no spreaders. I looked at the usual fibreglass fishing rod blanks, bamboo poles, etc, and decided they were too costly, or needed extensive protective coatings. Wooden ones were too fragile, and were subject to rot; or were they? After visiting our local hardware shop, I found 5/8 inch dowels (16 mm) and, although they looked promising, I was still concerned about their longevity.

A chance discussion with a friend gave me the answer. I bought eight

dowels of sufficient length to make spreaders for the 10 and 15 metre bands, took them to a local timber impregnation plant, and had them pressure treated by the same method as pine.

The rods were cut to length and fixed to the hubs with stainless steel worm drive clips. Anchor points for the radiating wires were determined, eye hooks were put in place to receive them, then the elements were fitted and secured with black cable ties.

However, when I lifted the assembly up, the rods flopped about like limp celery. Strength was obviously a problem. I tied together the ends of each pair of spreaders with lengths of cord that I was assured was weatherproof, and everything was fine - for about 6 months!

Whilst the cord was weatherproof, it

was highly susceptible to UV rays, so the cords broke and left the spreaders flopping around again. But the spreaders did not break! They were flexible enough to withstand normal wind loads.

Down the quad came again, and this time I used weatherproof and UV-proof line to tie the spreader ends together. This proved to be successful. That is, until one day after a violent windstorm a few years later, I found two spreaders broken. This time, however, it was my fault.

Over the years, a nearby liquid amber tree had grown and spread so much that one of its branches had encroached into the wingspan of the quad. During the storm the branch had thrashed around so much that it had broken two adjacent spreaders.

But the final part of the story is that, after 12 years, the spreaders that were not broken were still providing good service. It was dismantled in 1995 when I moved house, and the system has not yet been re-erected, but the spreaders are still OK for further use.

So why not try treated dowels for spreaders? But when you do, select carefully the ones you want so as to ensure they are straight grained, as this is the secret of their strength.

ar

■ History

Big Brother is Watching You - Thank Goodness!

Sam Wright VK6YN
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Gooseberry Hill WA 6076

The rescue, deep in the Antarctic seas, of yachtsman Tony Bullimore, graphically illustrated the present day sophistication of warning and distress beacons, and the related Search and Rescue Procedures ability to function over great distances, all by the use of satellites.

It also recalled to me an incident, over fifty years ago, when ships and airmen in distress situations were also monitored, when recourse had to be made to the calls Pan, Mayday, and SOS, with more care and efficiency than they realised.

In mid-1945, I was flying as a Navigator/Wireless Operator in Anson

aircraft on the daily return diplomatic mail service between Croydon, London and Le Bourget, Paris (there never was a satisfactory technical explanation for the remarkably high incidence of "mag drops" at Le Bourget, necessitating an overnight stay, but not unconnected were the extremely artistic displays which were on show at the fabulous "Moulin Rouge"!).

The radio equipment in use was the MF/HF Marconi TR-1154/1155, which was situated behind my seat, with a rather horrible Bakelite Morse key on a ledge by my right hand.

On the trip in question, a spare pilot, who wore (note well!) a uniform of deeper blue than that of the RAF, was perched on the top of the bags of mail, leaning over my shoulder, and seemed, for a pilot, more than usually interested in my navigation and radio activities.

Nothing untoward occurred on the flight, but there was a summons to report to the office of the Adjutant shortly after landing. My pilot and I were closely questioned as to whether, in mid-English Channel and in the vicinity of our 'track', we had seen or heard any sign of an aircraft or vessel in distress, as the monitoring service had picked up an SOS call at the time and area of our flight.

We had not, and were puzzled and concerned that perhaps we should have been more diligent and observant. However, we were fortified by the obvious dedication of the operators of the monitoring equipment, probably housed in a darkened room, and hunched, with poised and delicate fingers, over their "goniometers", with an aura of Guardian Angels to us wild and reckless airmen.

So what had really happened?

The English Channel holds the

secrets, and the debris, of conflict way back beyond the Spanish Armada. The more recent addition of ships and aircraft reflects, no doubt, so many desperate SOS calls for assistance, with fate holding away over the outcome. That superb band leader, Glen Miller, for instance, was lost without trace in mid-channel in December 1944, but his voice is still with us of that generation, and who can forget the magic of "In The Mood"?

So what of our experience of a "positive" monitoring, which had no easy or apparent explanation? Was it a ghostly echo from a desperate crew of an earlier day, when disaster was upon them?

Like a persistent toothache, the matter niggled on and, although we were adjudged to be "in the clear" by the powers that be, it was only much later, during a moment of insight, or even from a kind of suppressed guilt, that a rather mundane explanation offered itself.

The 1154 had a "tune" position providing low power radiation and, at some time on the flight, I must have left the switch in this position, possibly when taking a "drift".

Pilots are prone to fiddle, like the rest of us, and our "spare bod" in the back, bored or vaguely dreaming of becoming a radio ham after demobilisation, undoubtedly could not resist getting his hand on my Morse key. I can only conclude that his knowledge of the Morse code was limited to two letters, being those of three dots and of three dashes, sent, perhaps with a heavy and inexperienced hand but strong enough to tickle the sensitive goniometers of those Guardian Angels doing what conscientious Guardian Angels do in their lairs hidden away from our mortal eyes.

It really was a most comforting incident.

ar

■ History

The Father of Youth Radio

Rex Black VK2YA (1912-1997)

Sid Ward VK2SW
33 White Avenue
Wagga Wagga NSW 2650

It is with mixed emotions that I put together the following abridged record of a lifetime of association in communications with Rex Black. I am very sad to be writing of his passing, but it is a pleasure to recall some of this man's wonderful achievements.

Whilst I didn't know Rex personally until he moved to Wagga in the late 70s, I, like most amateurs that had been around since the very early post-war years, did know of his activities in youth training within the amateur radio movement. His particular field was providing training and encouragement to

young people who were leaning towards amateur radio as a chosen hobby.

Rex was a natural 'educator', that being his profession as a very respected high school teacher. He was the main instigator of the famed **Youth Radio Scheme**, which was endorsed and approved by the WIA back in the days when training facilities for young people (often still at school) were difficult to obtain at a local level.

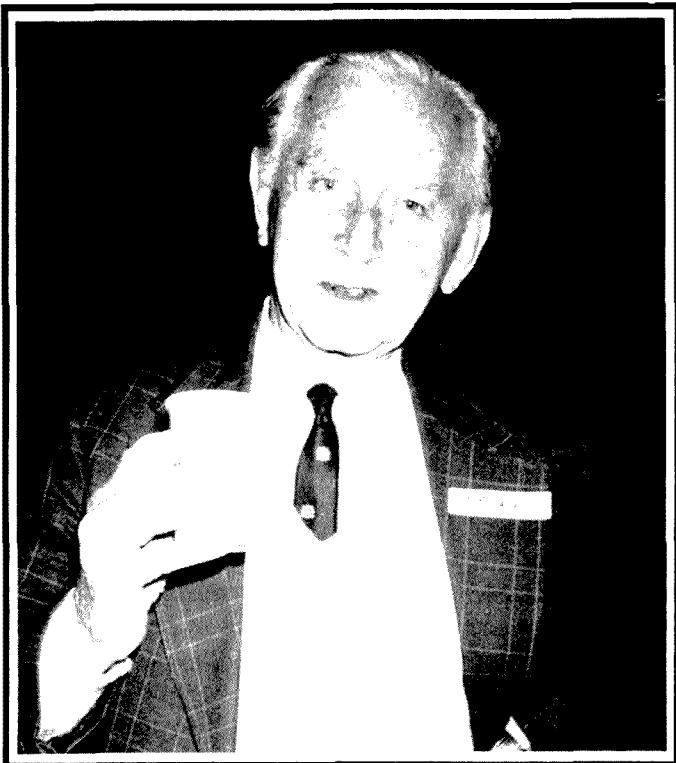
It seemed that Rex was always there when youth training was involved. His efforts, in conjunction with other dedicated amateurs, resulted in many

new amateurs joining, and remaining, as active amateurs of the future. Young people of the day owed such a lot to Rex.

His work with young, prospective amateurs followed a colourful career in the armed services (mainly the RAAF). To provide details of his military service (again in communications teaching) would require much more space than is available for this article. Suffice to say, that as would be expected from a man of Rex's character, he sought precision in everything in which he was involved. This included radio theory and, of course, his 'pet love' Morse code.

I will stick to his history as far as amateur radio is concerned. From information supplied to me by Jo Harris, the VK2 Division Historian, it is amazing just how much unselfish effort was poured into our hobby by Rex from 1953 onwards, right up to within a very short time of his death in November 1997.

In my opinion, he would be the most patient, conscientious teacher of ANYTHING that I have ever encountered. He was a perfect gentleman at all times and he would bend over backwards to help anyone who had



Silent Key Rex Black VK2YA

the slightest leaning towards amateur radio.

Rex came to Wagga in 1979 and went straight into encouraging would-be amateurs to study and obtain their licences. His proficiency in CW was very well acknowledged, and for many years he was a leader in the famous nightly VK2 slow Morse training on 3550 kHz. Many members of the amateur radio community used this Morse training to lift their Morse proficiency.

I had the privilege of being one of his Morse-practice operators during his years in Wagga. He had great support from professional and dedicated CW operators over the years, and many current amateurs can thank Rex and his band of helpers for the training they received at his hands.

Amateur radio was not Rex's only community-based activity. During his years in Wagga, he was involved in many educational and social clubs, and was also a regular contributor of extremely well thought out newspaper articles on a whole range of public interest subjects.

He was a very learned man who liked to share his knowledge and experience with others; he was a great family man, was extremely co-operative, and at all times a perfect gentleman.

His passing is a great loss to the community in general and to the amateur radio movement in particular. His family are very proud of him.

Thanks for everything, Rex.

ar

■ Test Equipment

Build a Cheap RF Capacitance Bridge

Ron Sanders VK2WB
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Introduction

There have been several articles in *Amateur Radio* over the past year or so which provide details of filters for HF use, and construction of suitable inductance measuring equipment (see the references at the end of this article).

If you need to build such filters, it is useful to be able to measure fixed (or variable) capacitors to a reasonably close tolerance (5% or better). Close tolerance capacitors are not only difficult to find, but are also more expensive, so it is better to make up the value from a few common 20% tolerance capacitors by combining them in parallel. Most of these filters use

capacitance values between 10 and 4000 pF.

A comparison bridge is a very simple instrument, with the ability to measure to accuracies of at least 5% if it is carefully constructed. Since I had a good quality, small variable capacitor of about 150 pF, I decided to build a capacitance bridge. The capacitor used must have a linear relationship between capacitance and shaft rotation; ie it must have semi-circular rotor plates and symmetrical fixed plates. If a linear type is not used the calibration curve will not be a straight line.

For bridge excitation and detection, I initially used the "sweeper" which was designed by Tibor Becce and featured in *Electronics Australia* over several months. This is an excellent system for many HF applications and is a very useful tool for the shack if you have a computer.

For those who don't have the "sweeper" equipment I decided to try a simpler system for the bridge excitation and the detector. This system uses fixed oscillator frequencies for excitation with a receiver as the detector for the bridge.

Bridge Circuit

Refer to Fig 1. The variable capacitor is the heart of the bridge, and should be of good quality and construction so that the settings give repeatable results. If you want to measure small values of capacitance (eg 10 pF), the minimum value of the stray circuit capacitance should also be small.

I chose to make the lowest range about 1/3 of the capacitor variation, by scaling the resistors R6 to R1 in a ratio of 3:1. The ratio of the "capacitor under test" to

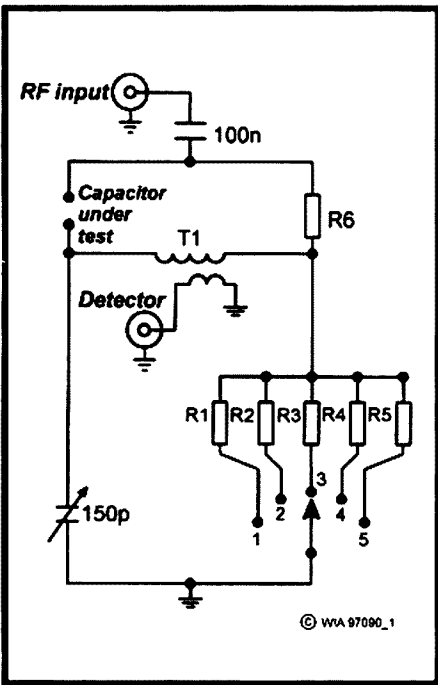


Fig 1 - The bridge unit.
T1 - primary 12 turns, secondary 4 turns on FT-37-43 core.

Resistors:

- R1 10 R**
- R2, R6 33 R**
- R3 100 R**
- R4 330 R**
- R5 1 k**

Ranges:

- 1 0 - 60 pF**
- 2 0 - 180 pF**
- 3 0 - 500 pF**
- 4 0 - 1.8 nF**
- 5 0 - 5.0 nF**

the variable capacitor must then equal the R6 to R1 ratio for the bridge to balance.

At balance, the voltages at each end of the T1 primary are equal, and so produce no current through the winding. This is the "null" (theoretically zero) output when the bridge is adjusted for balance.

I decided to keep the bridge impedances reasonably low (a few hundred ohms) and have five measurement ranges covering 0 - 5000 pF. Since the bridge requires a balanced detector output, a balun is used to couple to the unbalanced coaxial input of the detector. A good property of the bridge circuit is that it is only necessary to detect a "null" output when the bridge is balanced, which means that a high gain, uncalibrated detector can be used.

Various circuit values were tried for the range resistors, with the aim of having range two cover the approximate range of the variable capacitor, ie 0-150 pF. This meant that the values of R2 and R6 should be the same. The ranges then approximate the scale of 0.3, 1, 3, 10, 30, which is commonly used by instrument manufacturers, as it provides good overlap.

To meet the requirement for a low bridge impedance and sharp "null", it was found necessary to use three frequencies for excitation. For the two lower ranges, 10 MHz gave good results, while 4 MHz was used for the next two ranges, and 1 MHz for the highest range.

Calibration

Refer to the Calibration Plots. The bridge was calibrated using a few good quality capacitors which were measured to within about 1% by a friend with access to a laboratory bridge. A few selected values of 1% silvered mica capacitors from RS Components will provide calibration points if you cannot get access to a laboratory instrument.

Once the values are known they can be combined as necessary and plotted to provide a calibration curve. The plotted points for the five ranges of my bridge are shown below, and closely conform to a straight line.

Excitation Oscillator

Refer to Fig 2. There are plenty of cheap oscillator modules available (ex PC boards) which cover from 1 - 50 MHz and provide a square wave output

of approx 5 V p-p. Note that the output of these modules has a DC bias and must have a blocking capacitor in circuit.

As long as you calibrate the bridge at your chosen frequencies, the results should be just as good. The higher the frequency the more you will get "stray" effects in your readings, resulting in non linearity. The highest frequency will depend upon the smallest value capacitor you want to measure; in my case 10 MHz was suitable. I have used a wide-band step-down transformer on the output to reduce the output voltage and provide a low impedance source for the bridge excitation.

My unit switches the 5 V supply to each module to prevent any pickup of the unused module by the detector (receiver), but this may not be necessary. I have also put blocking capacitors in each module output to prevent any possibility of shorting during range switching.

I have not shown the pin connections for the oscillator modules as they can be in either eight or 14 pin DIL packages.

Detector

Refer to Fig 3. If you have a receiver with an S meter which covers the oscillator frequencies used in your bridge, it can be used as the null indication. Alternatively, your ears will act as a very sensitive null detector if the receiver is providing an audible beat note. This arrangement will require an attenuator, with steps allowing at least 0 - 80 dB change, in the input to the

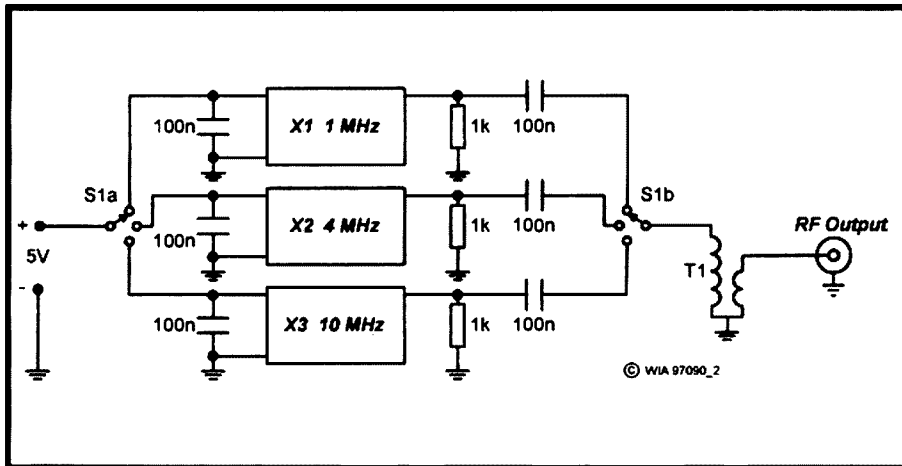


Fig 2 - The bridge excitation unit.
T1 - primary 12 turns, secondary 4 turns on FT-37-43 core.
All capacitors 100 nF.

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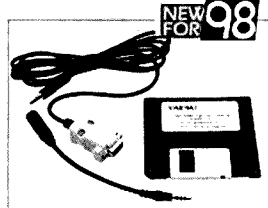
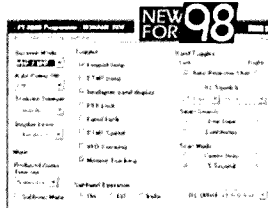
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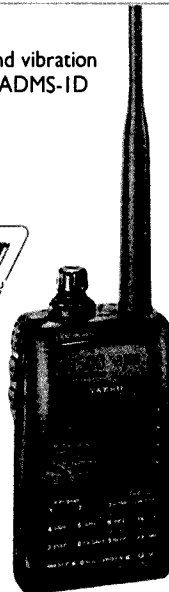
- Tx 144-148MHz, 430-450MHz.
- RX 76-200, 300-540, 590-999MHz (cellular blocked).
- New FTT-12 keypad provides Digital Voice Recording, DTMF paging, CTCSS/DCS scanning and CTCSS encode/decode.
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- High-speed scanning, 12V DC socket, Digital Code Squelch.
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D 3660

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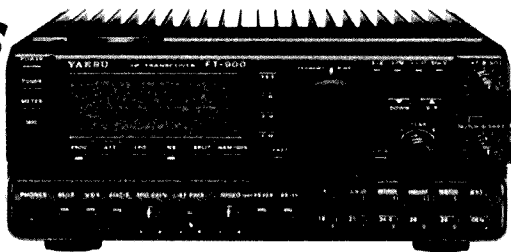
D 3280

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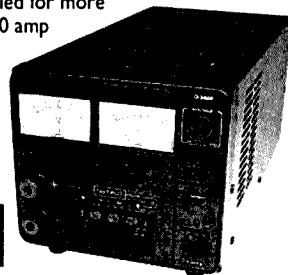
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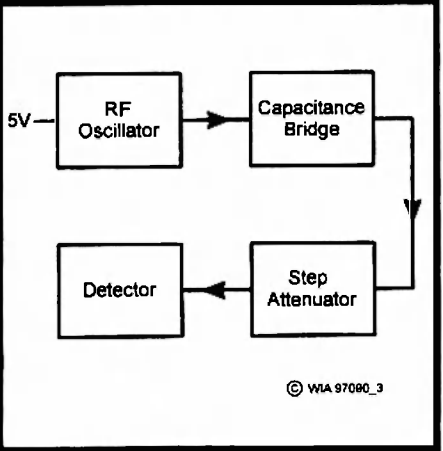


Fig 3 - Block diagram.

receiver to provide sufficient adjustment to pick the "null" when the bridge is balanced. Such an attenuator is listed in the *ARRL Handbook* and other amateur publications, and uses readily obtainable parts. The test arrangement as outlined above is almost as good as using the "sweeper" equipment.

Construction

The capacitor under test is connected between two binding posts, which are the only components outside the bridge enclosure. Use good quality binding posts which should provide metal to metal surfaces at the clamping points rather than plastic.

I used a vernier dial on the variable capacitor to give more repeatable readings. My oscillator and bridge are in separate shielded boxes to reduce direct

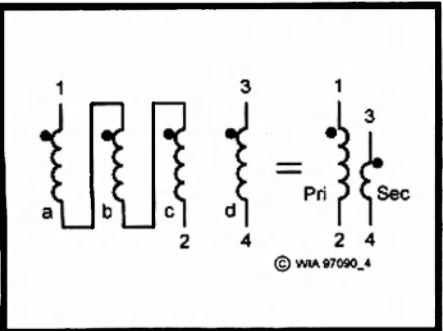
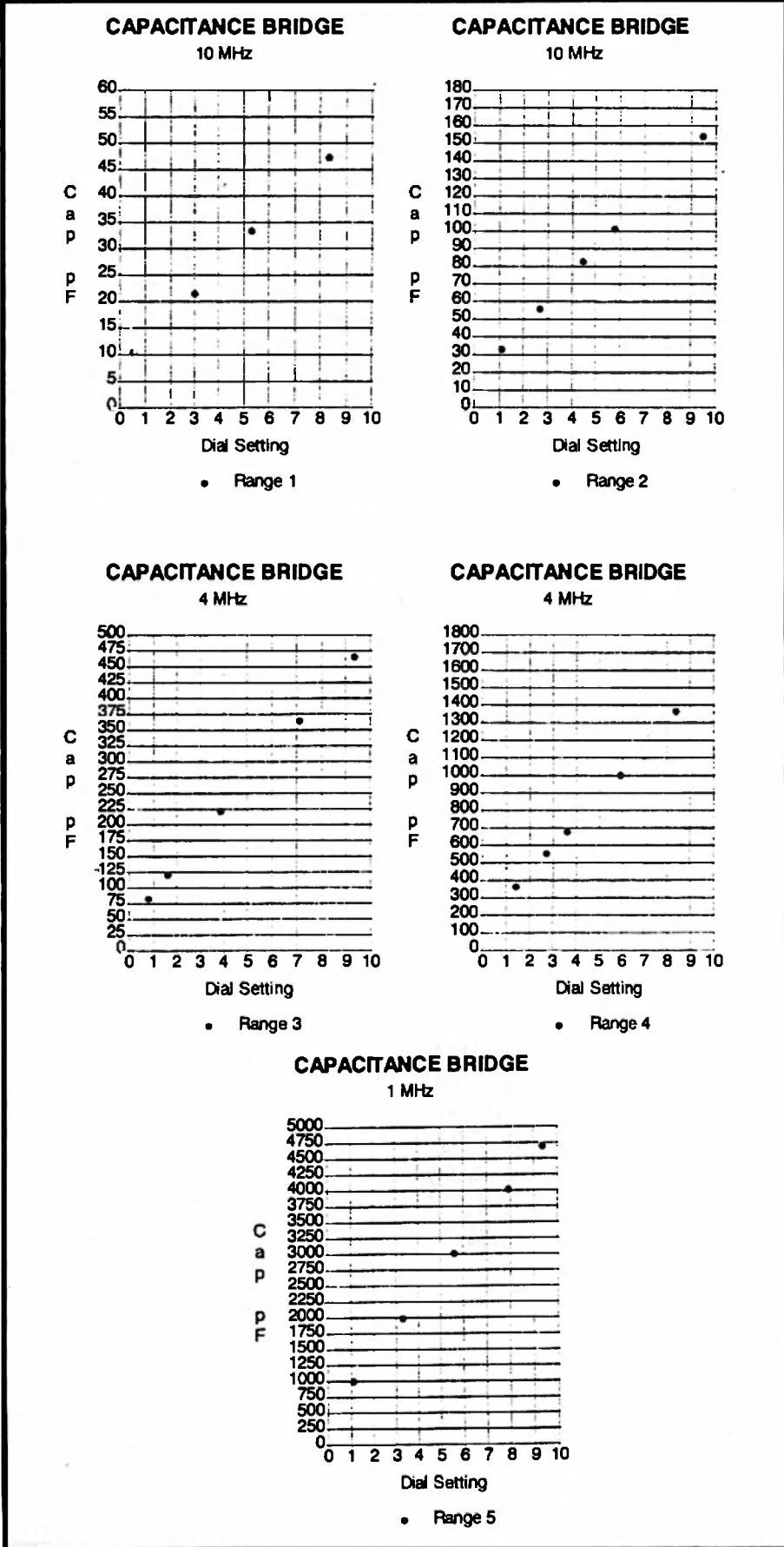


Fig 4 - T1 construction. Wind four turns around an FT-37-43 core using a bundle of four equal length wires. Identify the starts (•) and finishes of each winding of four turns (a, b, c, d) and connect as shown on the left. This produces a primary of 12 turns and a secondary of four turns.



Calibration Plots.

coupling between the excitation and detector, and all interconnecting leads are RG58 coax.

Use solid mechanical construction when mounting the variable capacitor, and try to keep the bridge layout reasonably symmetrical with short point to point wiring to reduce stray capacitance. The oscillator unit lends itself to construction on a piece of single-sided copper-strip matrix board with 0.1" pitch holes. The transformer (T1) should be wound using the quadrafilar method to reduce unwanted capacitive coupling between the windings. For those unfamiliar with this method refer to Fig 4.

Some Final Thoughts

To reduce the system to the bare minimum, I tried using a "dipper" (GDO) for the bridge excitation by coupling via a small 1-2 turn loop at the RF Input connector, and using the receiver as the detector. The results were surprisingly good and, provided the excitation set-up remained in a stable physical relationship, the stability was adequate for the receiver to detect the null.

I haven't tried it, but it might be possible to replace the output transformer in the oscillator unit with a non-inductive potentiometer, which

would allow sufficient adjustment of the output to dispense with the step attenuator.

The 5 V supply to the excitation oscillators could be derived from a built-in regulator inside the enclosure.

References

1. *Technical Abstracts*, June 97 AR
2. *RF Inductance Meter*, June 97 AR
3. *Little-L Inductance Bridge*, Nov 92 AR
4. *Constant-K Filters*, Aug 97 AR

ar

■ Tuneable Oscillators The Super VXO Heads South

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Garran ACT, 2605
e-mail: parkerp@pcug.org.au

Introduction

Maximum pulling range with acceptable stability. That's the aim of every experimenter who dabbles with variable crystal oscillators (VXOs for short). Each VXO is a unique case, and it can be hard to duplicate other people's results.

What follows is an account of experiments performed with a little-known technique that can dramatically increase the pulling range of VXOs. Claimed to have been first used by Mr Shimizu JA0AS (now Silent Key) and Mr Okubo JH1FCZ, the experimental results of the first "Super VXO" were published in the August 1980 issue of the *Fancy Crazy Zippy*, a homebrew and QRP magazine published by JH1FCZ. Until very recently, the idea appears not to have been widely used by experimenters outside Japan.

The writer was first alerted to the possibilities of the so-called "Super VXO" by a message on the Internet

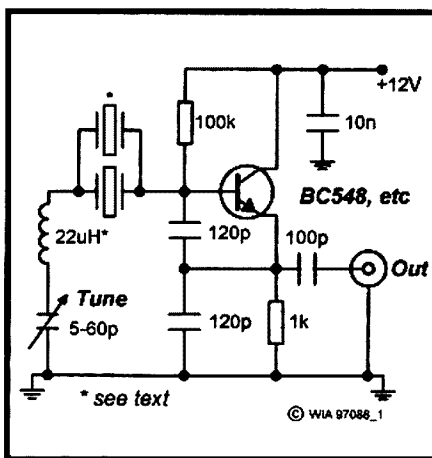


Fig 1 - Schematic of the twin crystal VXO.

rec.radio.amateur.amateur.homebrew.newsgroup. I was initially sceptical, as many published VXO circuits have claimed extended pulling range. The message gave 7N3WVM's Internet Home Page as a reference.

Circuit Description

Reference to this page revealed a Colpitts VXO circuit that looked like any other. What was different, however, was that the "Super VXO" uses not one but two crystals on the desired frequency. The second crystal was simply wired in parallel with the first. Adding the extra crystal was claimed to dramatically increase the frequency shift available. 7N3WVM reported a 40 kHz pulling range on 10 MHz and 90 kHz on 13 MHz with his twin crystal VXO circuit.

Experiments Performed

To test whether these results could be duplicated, the author constructed an experimental VXO circuit similar to that used by 7N3WVM (Fig 1). A transistor labelled 5643 was used in the prototype, but a BC548 should work just as well. A 22 μH RF choke was used as the series inductor. Sometimes two were wired in series to increase the VXO's pulling range. Leads were kept short to ensure reliable operation.

Once the oscillator was completed, its output was fed to a digital frequency counter. Tests were done with a selection of crystals of varying sizes. The object of the exercise was merely to prove that adding the extra crystal did increase the VXO's swing. For this reason, no attempt was made to optimise component values and increase shift further. Neither were detailed measurements of the VXO's frequency stability performed.

Table 1 - Test Results

Crystal frequency (kHz)	VXO inductance (μH)	Number of crystals used	Minimum frequency (kHz)	Maximum frequency (kHz)	Shift (kHz)	% change
3579	22	1	3579.26	3580.52	1.3	-
3579	22	2	3579.28	3581.33	2.0	54
4433	22	1	4430.78	4435.24	2.6	-
4433	22	2	4431.13	4436.93	5.8	120
4433	22	3	4431.93	4437.90	6.0	130
5366	22	1	5364.27	5368.83	4.6	-
5366	22	2	5364.28	5369.86	6.6	44
5366	44	1	5362.63	5368.13	5.5	-
5366	44	2	5360.07	5369.65	9.6	74
7159	22	1	7156.52	7162.65	6.1	-
7159	22	2	7154.55	7165.11	10.5	72
7159	44	1	7151.75	7160.80	9.1	-
7159	44	2	7135.93	7162.95	27	197

Results

Table 1 shows the results of the experiment. The most significant finding is that, in all cases, adding an extra crystal increased the VXO pulling range. The increase achieved varied between about 40 and 200 percent. The benefits of adding the extra crystal appeared greater

when larger series inductances were being used.

An interesting experiment was the use of three parallel crystals during one test. The result achieved did not justify the addition of the third crystal. As well, the three-crystal oscillator was sluggish in

starting when the variable capacitor was near maximum capacity.

Builders of VXOs tend to favour HC6/U size crystals rather than miniature types (HC18/U, HC25/U) for greatest frequency swing. The 4.433 and 5.366 MHz crystals were in HC6/U holders, while the others were in HC18/U cases. The results with the 7.159 MHz crystal were particularly interesting. Despite its smaller holder, a wide frequency swing was obtained, especially when the larger inductor was being used.

Conclusion

Adding an extra crystal has been shown to substantially increase the pulling range of VXO circuits. Builders of VXO-controlled equipment should always order two crystals instead of one – the extended shift obtainable will probably be worth the extra expense.

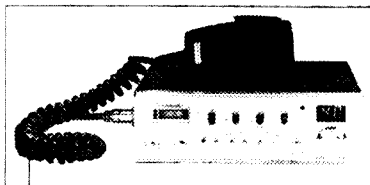
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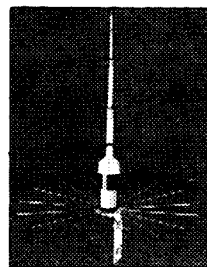
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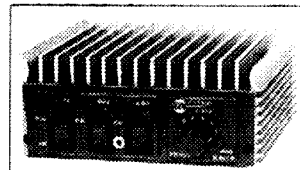
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Almost a YL

During the school holidays Dot VK2DDB let her son Peter, who has his learner's permit, take her for a long drive which ended up at Cottage Point close to the village where Jean Darling lives. Dot decided to pop in and was in luck as Jean was at home watching the tennis. She was delighted to meet them and chat about radio.

Jean was "in signals" during the war and could do Morse easily. Assuming it would be easy to get her amateur radio licence, she attended the WIA classes at St Leonards. She was rather surprised that the theory was so hard and decided to remain interested in radio but do other things.

Jean is a very active lady who loves walking. To practise for a hike in the Himalayas a few years ago, she used to go bush walking in the Blue Mountains every weekend. She was planning a long walk in the South Island of New Zealand at the time of the visit. Jean has a collection of rocks from her many walks and even had to pay excess baggage for her souvenirs after one trip.

Jean now lives in a unit surrounded by beautiful gardens. Linking each block of units are boardwalks beside tree ferns and over smaller ferns in the dry creek beds with gum trees over all and the air filled with bird calls. Dot had the impression that aerials, beams and towers would not be welcomed.

Travellers

Agnes PA3ADR and OM Hank dropped in on Dot VK2DDB earlier this year. They were returning from a trip to the beach at Mona Vale to Quaker's Hill, where they were staying with their son and his wife, via Galston Gorge which made it easy to visit Dot.

Agnes also has a VK callsign VK2GWI and tried to join the YL 222. Unfortunately, she could not be heard. Agnes and Hank returned to the Netherlands the day after they visited Dot, and Agnes was hoping to join the 222 net from home. Has anyone heard her?

On the Web

(Richard VK2SKY
richardm@zeta.org.au)

Linda KF4GKN contacted Richard to let him know that his page at <http://www.zeta.org.au/~richardm/RadioClubs/other/alar.html> had been linked to the Stones River ARC YL Page at <http://www.voy.net/~rfi/yl.html> which is one of the largest YL link pages on the entire WWW. Linda hopes you will come visit, and is keen to discover any other YL links which are not included on this page. Just drop her an e-mail with your URL.

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Internet e-mail: rgrattid@ozemail.com.au

The YLRL Home Page address has been changed to <http://home.earthlink.net/~tenmtry/ylrl/>

Nearer home, Dot VK2DDB is setting up a Web page for ALARA for Tony VK2TJF to add to the HADARC page, <http://marconi.mpce.mq.edu.au/hadarc/> It should be up and running by now – have a look (the page features a photo of Dot). She had to learn how to use Netscape, and the shack now boasts two computers side by side opposite the radios. "It all looks very technical for just a housewife," says Dot. Some of these 'housewives' lead very interesting lives!

South Meets North

(from Alison G0ALI via BYLARA
Newsletter December 1998)

Alison sponsored Celia ZL1ALK several years ago and, although they exchanged many letters, they had never met or even spoken – until 1997. Celia's youngest son, who had been studying in England, announced that he was getting married in Oxford, so of course Celia and OM Geoff wanted to be at the wedding. Plans were made to include meeting Alison, who happened to live not far from where Celia's father was born.

The long awaited meeting was delayed for more than an hour by a coach driver who got lost in Birmingham, but at last they got together. They even recognised each other from the photographs exchanged over the years (warning – don't send your sponsor a 20 year old photo – you never know when you might meet her!) The meeting was a great success and now Alison is saving for a trip to New Zealand.

If you have been thinking about sponsoring a YL in another country, but hesitate because you are unable to contact them by radio, be inspired by this story and go ahead.

1999 YLRL Convention

This will be held on 30/31 July 1999 on the Queen Mary in Long Beach, Southern California. More details later. If you have not seen the January *Newsletter*, the contact is Martha Barron KA6TYO.

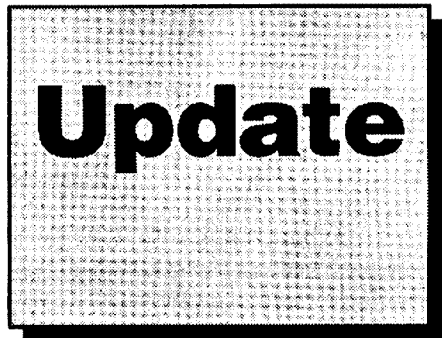
Wyong Field Day

(Dot VK2DDB)

The day dawned hot, but not as hot as some previous years and a gentle breeze moved the air occasionally. Nancy Karas, busy knitting an Aran jumper to put in the Sydney Royal Easter Show (to be held for the first time in the new show grounds at Homebush), sat with Dot and chatted with the visitors at the ALARA table. About 40 people signed the visitors book, although many more came to look.

Anne VK4ANN was one welcome visitor who took the chance to sit at the table in the air-conditioned room away from the crowded stalls. She managed to catch up with a few friends and acquaintances who passed the table on their way round the room. Dot's two sons entered the foxhunts and won prizes. They also managed to be walking past stalls of pre-loved stuff just as the people were deciding they didn't want to take it home again, and collected a selection of 'good junk'.

ar



"Club News" – Northern Corridor Radio Group CQ World Wide CW Contest

(published on page 51 of *Amateur Radio*, March 1998)

Neil Penfold VK6NE, the author of the news item, has pointed out that the callsign of the club station of the Northern Corridor Radio Group, which appeared in the second line of the third paragraph as VK6AN, should be VK6ANC.

It might be a good idea to correct your copy of the March 1998 issue of *Amateur Radio* now.

ar

Further to my earlier notes about Morse code exams, one correspondent has suggested that the format of the examination be altered to allow a few seconds at the end for the candidate to fill gaps or correct any misshapen letters. Another has suggested that the candidate should be allowed to copy out the completed text to make it easier for the examiner to read.

The standards for the CW examinations vary considerably from country to country. In some, time is allowed at the end to read over. In others, the text written down is not checked, but the candidate is asked questions on the content received. Others, as in Australia, insist on "pens down" as soon as the closing signal is sent. They also vary in the character speed, overall text speed, length of both sending and receiving texts, and the number of errors allowed.

Similar variations occur with the sending. In some countries no sending test at all is required.

The WIA has long endorsed the present system. The examination is a test of ability to recognise the Morse characters and write them down. It is not a test of the candidate's ability to journalise, or to spell, or to guess the letter which should have filled the gap. If you

**Education
Notes**

Brenda M Edmonds VK3KT
Federal Education Co-ordinator
PO Box 445
Blackburn VIC 3130

can fill a gap while taking down the rest of the text, fine. That confirms that you know the other letters well enough to have time to spare.

It is important, though, to write the characters clearly. The best method is to use block capitals. Practise this from the time you start to receive, emphasising the differences between similar letters such as D/O, U/V and X/K, etc. I have, somewhere, an old training document which shows how to form the

letters quickly and cleanly by providing arrows to show the directions of the strokes.

The practice text included at the start of the examination text is to help the candidate become familiar with the tone, speed and proportions of the examination. Use it also to again practise clear printing. If you must change a letter, make it clear. A botched correction is likely to be counted as an error.

On another topic, the *Examinations Committee* has recently submitted new Regulations examination papers for approval by the ACA. Some of these papers may well be ready for use by *WIA Exam Service* within a few weeks. Examiners who have become familiar with the papers used over the years may well feel that the new papers are harder than the old because there will be questions on them which they have not seen before. The Committee is very mindful of this effect, and is taking care that the standard is maintained.

Finally, a request: would members who write to me with queries please include a contact telephone number. I am a very lazy letter writer, and would much rather discuss a problem by telephone. If you have written and not received a reply, please write again and remind me.

ar

Thankfully, things are beginning to happen on the bands. Only a few, but they are among the wanted by most of the DXing population. I know, because I hear more people asking for QSL information, and who is the manager for so-and-so.

During my appointed rounds, I bumped into a QSL manager, who possesses a deep understanding of the QSLing process and always tries to do his best to see that each card reaches its destination. He was most passionate about those who send out cards without proper directions. He outlined a few rules which may help you to receive those precious pieces of cardboard which help towards DXCC, and other awards, world-wide.

Firstly, ascertain that the country you are addressing the card to has an active QSL bureau. If the answer is in the negative, find out who is the QSL manager for that operation, or the call book address of the particular operator. Also, remember that QSL bureaux do not possess any of the information mentioned above.

The QSL card size should not exceed 140 x 90 mm, or be less than 125 x 80 mm. QSLs should not be printed on lightweight paper.

The call sign of the recipient station must be clearly printed on the top right hand corner

AWARDS

John Kelleher VK3DP
— Federal Awards Manager
4 Brook Crescent, Box Hill South, VIC 3128
Phone (03) 9889 8393

of the card – front or rear. If the card is to go via a manager, this must also be marked clearly on the card.

The addresses of IARU registered QSL bureaux are printed on pages 12A and 13A of the *ARRL International Call Book*.

The BAFARA Award

This award is instituted by the Belgian Air Force Amateur Radio Association, and is available to all amateurs and short wave listeners.

Points to be obtained: ON stations 10 points; EU stations five points; DX stations three points; contacts heard with BAFARA stations, one point; contacts heard with BAFARA Club stations, two points. Each

station may be contacted/heard once only. No band or mode restrictions. Contacts made via relay stations or by automatic stations are NOT permitted. Only contacts made/heard after 1 January 1992 are valid.

Valid BAFARA Stations: ON1AEW, ANY, AKK, AOG, APF, ATZ, AZH, BCS, BDD, BOZ, BPJ, BPP, BPS, BSX, BUX, BXD, BXO, BZK, BZO, BZU, CGD, CIP, DG, HU, HQ, IR, IT, KFE, KGC, KJU, KLZ, KPM, KYC, RE, TY, XC; ON2ADX, AHJ, KDF; ON4AGV, ALL, ANM, AWK, AXV, AYP, BAJ, BZ, DD, HG, KR, KZF, MS, MW, NG, OK, PD, TE, TJ, ZL; ON5AP, DT, GX, HL, HO, JF, JR, ME; ON6AS, CT, EB, JE, KL, NU, TA, TJ, VP, XI, XP, UG, WR; ON7AV, BQ, EB, EC, EH, HO, HQ, HS, II, NW, OG, QI, QJ, SR, SU, SV, WG, YP; ON8MC.

Valid BAFARA Club Stations: ON4BAF, Royal Technical School BAF Saffraanberg; ON6AF, Special event station BAFARA; ON6AP, 10W TAC Kleine Brogel.

Send requests/GCR list (or QSL cards for SWL) – cards will be returned – to: Lode Kenens ON6KL, Oudestraat 4, B-3560 Lummen, Belgium.

The fee for the award is \$US7.00 or 6 IRCs.

The Six-Twenty Eights Award

The following award came to me via the Twenty Eight Chapter of Ten-Ten International Inc.

In late 1986 a number of 10-10ers in Perth got together to form a new Chapter, the first in VK6, to be known as the "Twenty Eight Chapter". This Chapter was officially recognised in January 1987. The Chapter has continued to thrive and, in January 1997, celebrated its 10th birthday.

In looking around for a way to celebrate this great event, it was realised that 1997 was also 168 years after the settlement of Western Australia by Europeans.

"So what?" you may ask.

Well, 168 just happens to be "6 x 28", a good enough reason to celebrate with an award. Consequently, the VK6 Chapter members decided on a special award, to be available to users of the 28 MHz band, to mark the occasion. The award is also available to Short Wave Listeners.

Rules

1. All contacts must be made/heard on the 10 m band.
2. Any mode (CW, SSB, FM, etc) is acceptable.

3 (a). Stations in VK, ZL, and P29 to make two-way contacts with 28 stations from at least six of the 10 VK call areas, of which VK6 must one, with at least six VK6s being members of the "Twenty Eight" Chapter of 10-10.

3 (b). All other (DX) stations to make two-way contacts with 10 stations from at least six of the 10 VK call areas, with at least one VK6 member of the "Twenty Eight" of 10-10.

4. The "Six-Twenty Eights" award is available until 31 August 1998, with the possibility of extension to deal with conditions.

5. Logs of stations contacted/heard, together with your application, should be forwarded to: Dave Hanscomb VK6ATE, Certificate Manager "6 x 28" Award, PO Box 39, Quinns Rocks, WA 6030.

6. Cost of the Award is \$AUS5.00 for VK and \$US5.00 for all others.

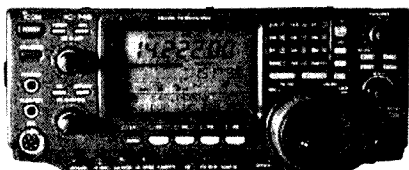
The Chapter conducts nets every Sunday at 0210z and 0830z on 28.560 MHz +/- QRM. Any further questions should be directed via packet to: VK6NKB@VK6 WFH.#PER.#WA.AUS.OC

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of February 1998:

L21150 MR K PERRY
L21151 MS Y H MATHESON
VK2FLA MR R KOONCE
VK2GVA MR J L MORRIS
VK2MBG MR B J GOODCHILD
VK2NNN MR A MEREDITH
VK2SRN MR S R NELSON
VK5AQZ MR G C HORLIN-SMITH
VK5HAX MR C R TAYLOR
VK5RD MR L G BENJAMIN
VK5UDX MR R J BURTON
VK5ZLC MR M M GELL
VK6PEC MR P G BARRETT

ar



Radio and Communications

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Oakleigh,
Victoria 3166
(03) 9567 4200

Here are two very different amateur transceivers, and they'll have quite an impact on the marketplace. The top one is the new **Icom IC-746**, a complete station in one case. All modes on HF, plus six and two metres at 100 watts all the way. Under it is the smallest dual-band HT ever made, the **VX-1R**. And look, **NEWS DESK** is back!

April's R&C re-introduces Chris Edmondson, VK3CE, as Editor. He's a man on a mission... Just read it to see!

- THE CONSTRUCTION ZONE: A new monthly home-brew column from Harold Hepburn, VK3AFQ.
- THE SUN: Understanding it can help you work out its effect on propagation. Here's a clear explanation...
- ANTENNAS: Another new column. We discuss antennas you can make every issue from now on.
- JURASSIC QUARK — or how to get an IBM-compatible computer for the shack for just \$15!! Why not?
- REVIEWS: This month, the exciting new Icom IC-746 and the absolutely incredible Yaesu VX-1R.
- As usual, we have our three DX columns, mods and more... the best stories and regulars every month!

Don't miss out — **RADIO and COMMUNICATIONS** is great reading for amateurs!
Check your local newsagent today!

(PS. We also have the biggest collection of radio-oriented Classified adverts in the country. There's lots of them because they work so well. Ask your newsagent to keep a copy for you each month, or ring 1800 25 2515 for subscription details. Hurry — you might miss something!)

VK3CE

Contests

Peter Nesbit VK3APN

Federal Contests Co-ordinator
PO Box 2175, Caulfield Junction, VIC 3161
pnesbit@meibpc.org.au

Special Prefixes

I recently received a call about the use of special prefixes by VKs in WIA contests. Apparently, some people have interpreted the ACA's ruling that "special prefixes will not be authorised for contests" to mean that the use of such prefixes in contests is forbidden.

This is not the case at all! The main intent of the rule is to stop every man and his dog applying for a special prefix, when there is no demonstrable public interest. If an applicant can demonstrate significant public interest, and meets all applicable ACA requirements for using a special call sign, then I doubt that anyone would want to know whether or not it was also used in a contest which coincided with the authorised event.

This is the only common sense interpretation. It can be argued that we are always contesting in one way or another, whether it is a formal contest, an activity period, how many stations we work during a call-back, where we stand on the DXCC ladder, or who currently holds a particular VHF distance record. Our competitive activities are all shades of grey, and efforts to find black and white interpretations just lead to a quagmire of ill-defined concepts of no legal significance.

Personally, I am delighted to see the emergence of special Australian prefixes during contests, as it makes things more interesting. In addition, we have lagged behind the rest of the world for far too long in this respect. To those who worry about the advantage that a special prefix might confer, don't forget that the holder will also have to contend with more requests for repeats, what is their QTH, who is their QSL manager, etc. Besides, special prefixes have become so common these days that I doubt they confer any significant advantage in comparison to all the other factors which determine the degree of success. As they say, variety is the spice of life.

For information and assistance this month, thanks to VK4NEF, VK4VW, I2UIY,

Contest Calendar April - June 1998

Apr 4/5	SP DX Contest	(Mar 98)
Apr 4/5	EA RTTY Contest	
Apr 10/12	JA DX High Band (CW)	(Mar 98)
Apr 11/12	King of Spain DX Contest	(Mar 98)
Apr 13	Low Power Spring Contest (CW)	
Apr 18	Australian Postcode Contest	
Apr 18/19	Holyland DX Contest	(Mar 98)
Apr 25/26	Helvetia DX Contest	(Mar 98)
Apr 25/26	SPDX RTTY Contest	(Mar 98)
May 2/3	ARI DX Contest (CW/SSB/RTTY)	
May 9/10	CQ-M DX Contest (CW/Phone/Mixed)	
May 16/17	Sangster Shield Contest (CW)	
May 30/31	CQ WPX Contest (CW)	(Feb 98)
Jun 6/7	IARU Region I Field Day (CW)	
Jun 13	QRP Day Contest (CW)	
Jun 13	Asia-Pacific Sprint (SSB)	(Jan 98)
Jun 13/14	ANARTS RTTY Contest	
Jun 13/14	South America WW Contest (CW)	
Jun 20/21	VK Novice Contest	
Jun 20/21	All Asia DX Contest (CW)	
Jun 27/28	ARRL Field Day	

LA9HW, OM6SA, PA3ELD, RW3FO, ZL1AS, and CQ. Until next month, good contesting!

73, Peter VK3APN

Low Power Spring Contest (CW)

1400-2000z, Monday, 13 April

Held by the Slovak Amateur Radio Association, this contest is scheduled for Easter Monday each year. Sections are single operator (single, three, and all bands). Power output categories (max) are: A: 1 W; C: 5 W; Q: 25 W; X: 50 W; Y: 100 W. Exchange RST, grid square, and power category (eg 579 QD24 X). Reception of RST is sufficient from non-contest stations. Score 18 points per QSO with OM stations, nine with stations in other continents, and three with stations in own continent. Multipliers per band are locators plus prefixes (WPX rules). Separate logs for each band. Send your log and summary sheet postmarked within 30 days to: Radioclub OM3KFV, PO Box 29, 036 01 Martin 1, Slovakia.

2nd Australian Postcode Contest (SSB/CW)

0000-2359z, Saturday, 18 April

This contest is held on the third Saturday of April each year, in which the aim is for stations world-wide to work as many different Australian postcodes as possible. VK/VK contacts are permitted. Contacts made during this contest will be eligible for the **Worked all VK Postcode Award**.

The only category is single operator, all band, SSB or CW. Use 80-10 m (no WARC). Please note that, in this contest, VKs are not allowed to transmit in the 3.8 MHz DX window. VKs will send RS(T) plus their four

digit postcode, and DX stations will send RS(T) plus a serial number commencing with 001.

Score two points per contact within Australia, and 10 points per contact between Australia and another country. Countries are as per DXCC/WAE. The multiplier will be the number of different postcodes worked on each band in the relevant mode, with the band totals added together. Note that repeat contacts on the same band and mode are not permitted, EXCEPT with VKs who travel to different postcodes, who can be reworked for the new postcode. The final score equals the total QSO points from all bands times the total multiplier.

Logs must show: Date, UTC time, band, mode, call sign of station worked, numbers sent and received, new multipliers, and points. Attach a summary sheet showing: name, address, call sign, section, the number of valid QSOs and multipliers on each band, claimed score and a signed declaration that the rules and spirit of the contest were observed.

Send your log postmarked within 30 days to: Australian Postcode Contest Manager, Oceania DX Group, PO Box 929, Gympie QLD 4570; or fax it to 075 482 7497; or e-mail it to odxg@keylink.com.au. Logs on disk must be standard ARRL/ASCII format.

The overall winner will receive a plaque donated by VK4FW. Certificates will be presented to the station with the highest score in each section in each country, as well as runner-ups. A special award will also be presented to the highest scoring VK Novice in each section. Further awards may be made at the discretion of the Contest Manager. If you would like to sponsor an award, please

contact the ODXG Contest Manager at the above address.

Note that untidy logs may be disqualified, and unmarked duplicates will result in the loss of all points for the QSO as well as the deletion of three contacts following the duplication.

ARI International DX Contest (CW/SSB/RTTY)

2000z Sat to 2000z Sun, 2/3 May

This contest occurs each year on the first full weekend of May. Anyone can work anyone else, and categories are single operator CW, SSB, RTTY or mixed; multi-operator single transmitter mixed; and SWL mixed. Bands are 160-10 m (no WARC). The same station can be worked on the same band once each on CW, SSB, and RTTY, but the multiplier can be claimed only once for that band. Once a band or mode has been used, 10 minutes must elapse before it can be changed. Send RS(T)+serial number, Italian stations will send RS(T)+province.

Score 10 points per Italian QSO, three points per QSO with stations in another continent, one point per QSO with stations in own continent, and zero points per QSO with stations in own country. Final score equals total points from all bands times total multipliers from all bands.

Multipliers are the sum of Italian provinces (max 103) and countries (excluding I and IS0) on each band. Countries include one's own. Province codes include: II: AL AT BI CN GE IM NO SP SV TO VB VC; IX1: AO; I2: BG BS CO CR LE LO MI MN PV SO VA; I3: BL PD RO TV VE VR VI; IN3: BZ TN; IV3: GO PN TS UD; I4: BO FE FO MO PR PC RA RE; I5: AR FI GR LI LU MS PI PT SI; I6: AN AP AQ CH MC PS PE TE; I7: BA BR FG LE MT TA; I8: AV BN CB CE CZ CS IS KR NA PZ RC SA VV; IT9: CL CT EN ME PA RG SR TP AG; I0: FR LT PG RI ROMA/RM TR VT; IS0: CA NU SS OR.

Use a separate log for each band, and a check log (ie sorted callsign list) for 100+ QSOs on any band. Send log within 30 days to: ARI Contest Manager I2UIY, PO Box 14, I-27043 Broni (PV), Italy. Logs on disk are welcome, but please include a printed summary sheet. Alternatively, logs can be e-mailed to ari@contesting.com.

Sangster Shield (CW)

0800-1100z Sat and 0800z-1100z Sun, 16/17 May

This unusual contest emphasises low power operation. The object is to work as many ZLs on 80m CW as possible. QSOs can be repeated once per 1/2 hour period, ie 0800-0830, 0830-0900, etc. At least five minutes must elapse between repeat QSOs with the same station, or else another station must be worked in between. Send RST plus power

output; ZLs will send their RST/branch/power. Non-ZLs using up to 5 W score 10 points per QSO with a ZL, if the ZL worked is using up to 5 W; or five points per ZL using over 5 W. Non-ZLs using more than 5 W score five points per QSO with a ZL using up to 5 W. QSOs between stations where both use more than 5 W are invalid for the contest. Final score equals total points times number of ZL branches worked. Send logs to reach: Contest Manager ZL3KR, 4 Exton Street, Christchurch 8005, NZ by 12 June. Certificates will be awarded to the highest scoring non-ZLs in their respective call areas.

42nd CQ-M Contest (CW/Phone/Mixed)

2100z Sat to 2100z Sun, 9/10 May

Sponsored by the Krenkel Central Radio Club, this contest runs on the second full weekend of May each year. Categories are single operator, single and all band; multi-operator single transmitter; QRP (5 W max); SSTV; SWL. Bands are 160-10 m. Multi-band entrants can also work through radio amateur satellites, in which case these QSOs count as an additional band.

Modes are CW, SSB, and mixed. No cross-mode QSOs please. Entrants in the mixed section can only make one QSO with each station per band.

Call "CQ-M", and exchange RS(T) (or RSV on SSTV) plus serial number. Score one point per QSO with own country, two points with a different country in the same continent, and three points with other continents (continents as for WAC). The final score equals total points times total number of countries from each band. Countries are according to the R-150-C list, which is similar to the ARRL DXCC list except for former USSR countries.

Serious competitors should review the R-150-C list. SWLs should claim one point for complete logging of one callsign in a QSO, or three for complete logging of both sides of a QSO. SWLs have no multipliers. Use a separate log for each band, and mail logs by 1 July to: Krenkel Central Radio Club, CQ-M Contest Committee, Box 88, Moscow, Russia. Please include a dupe sheet for 100 or more contacts, and a multiplier check sheet for 200 or more contacts. A wide range of awards is offered.

The CQ-M homepage is at www.mai.ru/~crc/cq-m/cqmain_e.htm. For additional information about Russian contests, see the Krenkel CRC web site at www.mai.ru/~erc.

Results of 1997 Jack Files Memorial Contest

Presented by Peter VK4VW

* = trophy winner

CW:
VK4EMM * 4323
VK3APN 2074

VK1WI 924
(opr VK1FF)
VK4BAZ 728
VK4ICU 490
Phone:
VK4PJK * 9520
VK4BAZ 8056
VK4AGW 7035
VK4MGA 6528
VK4MOJ 5776
VK4LAJ 2952
VK4DO 1219
VK1WI 714
(opr VK1FF)
VK4JAE 504
VK1PK 468
VK2LEE 385
VK4LUV 286
VK4PVH 202
ZL1AGO 130
VK5UE 126
Club:
VK4BAR 3017
SWL:
L40380 9520
(Patricia Johnston)
Highest Novice Score:
VK4PJK 9520

Results of 1997 PACC Contest

(call/QSOs/mult/score)
VK8AV 78 23 1,794
VK2APK 44 18 792
VK4XA 39 11 429
VK4ICU 9 6 54
VK4TT 6 4 24

Results of 1997 ARI DX Contest

(call/section/QSOs/mult/score)
VK2APK SOCW 451 122 182,783
VK8AV SOCW 127 75 45,874
VK3APN SOCW 23 17 1,994
VK4TT SOCW 23 13 1,504

Results of 1996 CQ-WPX SSB Contest

(call/band/score/QSOs/prefixes)

* = certificate

Single Operator, Open:
VK5GN * A 2,940,820 1592 545
VK8HZ * A 1,154,304 1143 334
VK4MV * 28 4,774 54 31
VK3DXI * 14 1,043,400 835 444
VK2ARJ * 14 398,880 537 277
VK4EET * 7 8,800 47 44

Single Operator, Low Power:
VK2VM * A 336,514 462 226
VK2AYD A 221,076 370 207
VK3NDS * 21 159,030 320 171
VK2APK * 14 317,520 416 280
P29MO * A 1,403,231 1160 416

Multi-operator:
VK4MZ 3,805,206 1781 551
VK1DX 2,959,530 1781 510
VK6ANC 1,596,718 1196 454

Not so long ago, I heard the following brief QSO on one of the popular afternoon HF nets.

Breaker: "Net control, can I have a contact with ABC who is on the net?"

Net controller: "Go ahead".

Breaker to ABC: "Do you copy me?"

ABC to Breaker: "Yes."

Breaker to ABC: "Did you receive my e-mail. I sent it three days ago?"

ABC to Breaker: "No, not yet, but I will check with my server after the net."

Breaker to ABC: "Good, send me a return e-mail. Thanks net Control. I will now QSY."

All this in the middle of a busy net. For a moment I did not know what to think about this short QSO between two Australian amateurs on the 20 metre band. Then it dawned on me. In this modern world of technology, two amateurs used the "wireless radio" to check on the movements of a message sent three days before on the "wire".

The world has gone topsy-turvy. Good old Marconi and his invention of the "wireless apparatus". His revolutionary technology is now slowly overtaken by an even older technology, "messages sent over the wire".

Highwater - VK8DK

I received a lengthy letter from Len VK8DK from Katherine, NT which was extensively flooded on Australia Day, 26 January. Len's letter was dated 29 January, but date-stamped at the Katherine Post Office on 24 February which would indicate that it took almost four weeks for the post office to become functional again.

Len moved to his new town in September 1997 and by December he finalised his plans to build a galvanised steel framed house about one km away from the Katherine river and well above the "once in a hundred years" flood level.

"My shack was flooded with 60 cm of water, the house frame is under two metres of water and one third of our personal belongings were wrecked," writes Len. "My transceiver remained dry, approx 200 mm above the final flood level. Interestingly, my electrical switchboard, which was completely submerged in the waters, remained fully operational during and after the flood."

Len would like to express his thanks for the help given to him and his family (who were isolated in another part of Katherine) by his fellow amateurs. His special thanks go to VK6LC, VK3WE, VK5FV, VK4CPA, VK3IK, VK4AGT, VK4GLD and VK8XC. Len closed his letter with these lines: "A helicopter landed this morning in my yard while I enjoyed my first shower in three days. They were just checking. I asked the crew if they had any food but not the baked beans

How's DX?

Stephen Pail VK2PS
PO Box 93, Dural NSW 2158

variety. They gave me a glad bag of food. I never knew that Nutri-Grain and milk tasted that scrumptious."

Bouvet Island - 3Y0

The southern hemisphere's summer, "The Austral Summer" as it is called, draws the Antarctic DXpeditions like a pot of honey draws the bees. In January 1997 it was Heard Island, in December 1998 and January 1999 it will be Bouvet (Bouvet0ya) Island.

The South Sandwich Island DX group will activate this very rare DXCC country with a planned two week stay. As with the past two expeditions under the SSIDXG banner (VP8SSI in 1992 and 3Y0PI in 1994) the SSIDXG plans a very comprehensive DXpedition with operation on all bands and all modes, including satellite. They plan to have four stations operational around the clock. The team consists of at least 10 operators made up of seasoned

DXpeditioners from the previous VP8SSI (South Sandwich) and 3Y0PI (Peter I) operations, plus other skilled operators.

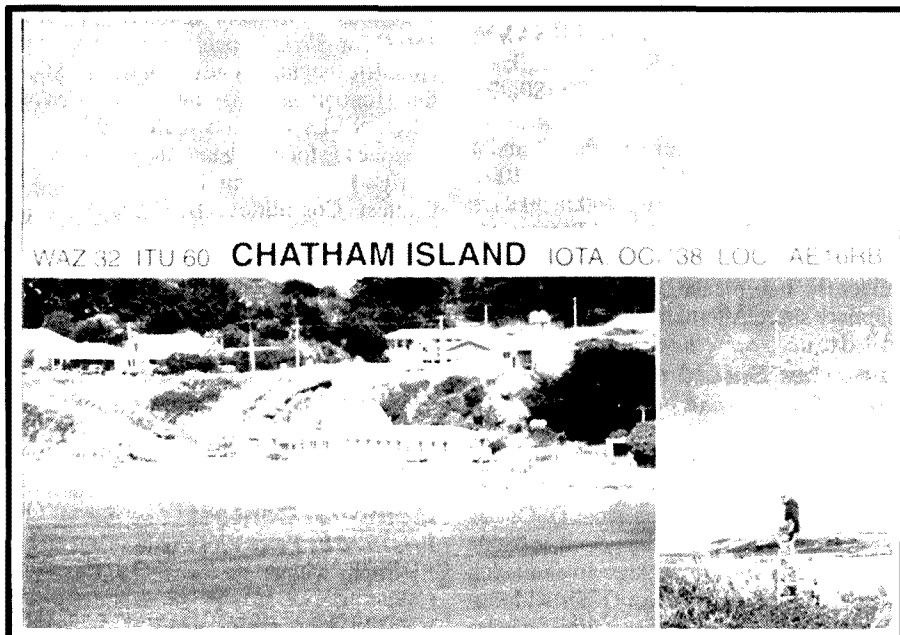
Bouvet Island (Bouvet0ya) is a Norwegian territory located in the sub-Antarctic area at 54° 24' South and 30° 25' East. Formerly known as Bouvet Island, Bouvet0ya is the southernmost island of the mid-Atlantic ridge. It consists of a single volcanic cone, with a wide indented crater, attaining a maximum elevation of 780 m (2560 feet) at Olaf Peak at the island's centre.

Iris Colvin - W6QL - Silent Key

Iris Colvin W6QL of Richmond, California, died on 18 February 1998 at her home. She was 83. For the older generation of DXers, Iris and her late husband, Lloyd W6KG who passed away in 1993, were DXing legends. Between 1960 and the early 1990s they travelled the world carrying their transceivers and antennas with them. They operated from over 100 DXCC countries, many of them places where amateur radio did not exist or was forbidden.

Many of the present DXCC Honour Roll members have at least one QSO on their register as a new country due to the efforts of Iris and Lloyd. The DXing couple were married 55 years. They made over a million contacts and their QSL collection, more than half a million cards, occupied a great proportion of their house. The DXing effort by the Colvins was recognised by the ARRL. They were named Amateur Radio Ambassadors of the Decade 1980-1990.

Lloyd made sure that future DXing activities received some monetary assistance after his death. He took out an old fashioned



Lothar DJ4ZB operated from Chatham Island in 1997 as ZL7ZB.

Endowment Life Insurance policy early in his life, for which he paid the premiums, and the ARRL was the beneficiary. The Colvin Award was established in 1994. The award disburses grants to support ham radio projects that promote international goodwill in the field of DX. Last year's Heard Island DXpedition was a recipient of that award.

The Colvins travelled under the sponsorship of the Yasme Foundation which was also their QSL manager. The Colvins visited Australia in January 1990 and, whilst Australia was not a rare DX country, in a very short period of time they had over 4000 QSOs and worked 143 countries with the VK2GDD callsign.

When in Sydney, they gave an "on air" interview at the broadcasting facilities of the WIA NSW Division during the regular Sunday news broadcast and conducted the "call-backs" afterwards. That Sunday broadcast was a memorable occasion for me because, among other things, it was I who asked the questions and the Colvins gave the answers. Subsequently the Colvins conducted a DX seminar at Amateur House in Parramatta, dispensing their DX know-how to those present. The passing of Iris closed a golden chapter of amateur radio DXing. If you are interested, read further news about the Colvin's Australian journey in the March 1990 and January 1991 issues of *Amateur Radio*.

Mongolia - JT

Kerry VK4MZ left on 24 February for Japan where he will spend eight days with four different JA families. From there he goes to Beijing for six to eight weeks. Kerry hopes to be able to work some VKs whilst in Japan and China. During his stay in China he will visit Mongolia and hopes to be active with a JT1F (plus two letters) callsign in the CQ WPX Contest on 28 and 29 March from station JT1BV. He also hopes to be active outside the contest operating on the "low bands".

By the end of April he will be back in Gympie via Japan and Brisbane. QSL will be direct only to his home address; for a variety of reasons, no bureau cards please. Send your card to K Viney, PO Box 381, Gympie, QLD 4570.

Future DX Activity

* **Guam - N2NL/KH2.** Dave will be in Guam for two years. He works CW only on 160, 80 and 40 metres.

* **Campbell Island - ZL9CI.** This expedition will take place in January 1999, according to Ron ZL2TT.

* **Sudan - ST2.** If you need this country be on 20 metres around 14200 kHz every Friday at around 0500 UTC. Abdullah 9K2GS is

conducting an informal Arab net in which Dr Sid ST2SA takes part.

* **Annabon/Pangalu - 3C0.** This activity was planned for the first two weeks in March. It did not take place due to the dangerous situation in that part of the world.

* **Sri Lanka - 4S7.** Mario HB9BRM will be active from here for about three months beginning 3 March as 4S7BRG. QSL via the bureau to HB9BRM.

* **Vietnam - XV.** Anders SM0ORV has recently been licensed as XV7SV in Hanoi. He has modest antennas and he has to operate on fixed frequencies of 3526, 7026, 10135, 14212 and 21235 kHz. QSL via his home call, or via the bureau to his home call. He will reply to the cards after he returns to Sweden in June.

* **El Salvador - YS.** Federico YS1FEA says that he, Roberto YS1CQ and Oscar YS1SH will be operational on 7055 kHz around 0200 to 0330 UTC. QSLs for all three go to PO Box 517, San Salvador, El Salvador, Central America.

* **Jan Mayen - JX.** Per JX7DFA can be heard on Saturdays on 18090 kHz from 1400 to 1500 UTC. QSL via JX7FDA, N-8O99 Jan Mayen, Norway, or via home call LA7DFA.

* **Niue - ZK2.** Albert HB9BCK will be active from 2 to 16 April as ZK2CK on 80 to 10 metres, including WARC bands. QSL to HB9BCK via the bureau or direct (two green stamps).

* **Cuba - CO2.** Winston CO2WF is active around 14151 or 21215 kHz between 1900 and 2100 UTC. QSL via VE2EH.

* **Mongolia - JT.** A group of seven Italian amateurs will operate as JT1Y from Ulan Bator for one week starting on 7 April. They intend to have at least two stations on the air around the clock on all HF bands on SSB, CW and RTTY. The group will use the facilities of the Club station JT1KAA. QSL via Nicola Sanna I0SNY, Str Gualtarella 8/M, 06132, S Sisto, PG, Italy.

* **Montserrat - VP2M.** Ait N2NB is active as VP2MDY from Montserrat one weekend a month for the next eleven months. QSL via NW8F.

* **Morocco - CN.** Ray F5LMK will be active on 10-80 metres SSB as CN/F5LMK between 9 and 16 May.

* **Guernsey - GU.** Bill G4YWY will be active as GU4YWY/m from this island between 9 and 14 April. QSL to home call.

* **Guernsey - GU.** Jean-Marc F5SGI will be active (mostly on 10-40 metres CW) as

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GU/F5SGI between 11 and 17 April. QSL to home call direct or via the bureau.

* **Crozet - FT5W.** Jean-Paul F5BU arrived on Possession Island, Crozet at the beginning of February and operates as FT5WG around 1630 UTC on 14183 kHz. QSL via Andre Jungbluth F6APU, 4 Rue de Tulipes, 67380, Lingolsheim, France.

* **Cameroon - TJ.** Tim TJ1FT was reported to be active until July or August. Look for him around 2300 UTC on 14220 kHz. QSL via PO Box 41, Makak, Cameroon, Africa.

* **Equatorial Guinea - 3C.** Ramon 3C1GS is active on 80, 40 and 20 metres. QSL, via Anselmo Bernabe Coll EA5BYP, Box 3097, 03080 Alicante, Spain.

* **Nepal - 9N1.** Hennig (ex-OZ2CU and ex-A22CU) is now active again from Katmandu as 9N1CU on 80, 40 and 20 m for two to three years. QSL direct to PO Box 4010, Katmandu, Nepal.

* **Zambia - 9J2.** Aki JA0JHA will be working in Zambia until the end of the year.

* **Chatham Islands - ZL7.** Ed K8VIR advises that as from 1 March he will be operating as ZL7IR portable whilst he is on the mainland of New Zealand, and then from the middle of March from Chatham Island proper. It is also reported that he will be in Tonga in April/May as A35VI on 14260 and 21300 kHz SSB. As from now, all mail has to be sent to his stateside address: Ed Hartz K8VIR, PO Box 480, Green Valley, 85622-0480, AZ USA. Ed says that the ZL7IR QSL will be a special "Chatham Islands Heads the World into the Third Millennium" card.

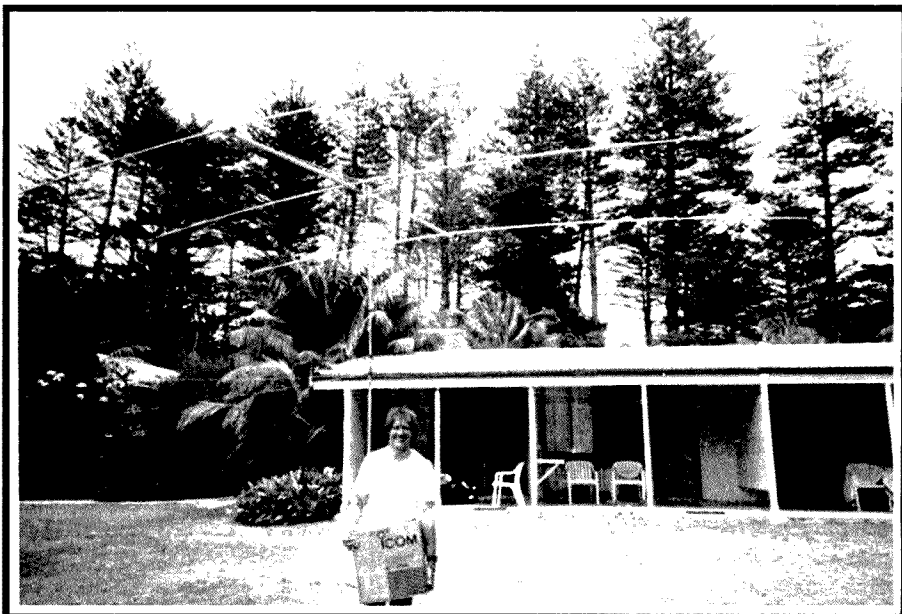
Interesting QSOs and QSL Information

* **A43XXV** Noor - 14199 - SSB - 1204 - Dec. QSL to Royal Omani Amateur Radio Society, PO Box 981, Muscat, 113, Oman.

* **E22AAD** - 14257 - SSB - 1202 - Dec. QSL via DL7FDK, Ralf Klinger, Feldstr 7, D-61479, Glashuetten, Germany.

* **H44IQ** - 14205 - SSB - 1024 - Dec. QSL via DL7VRO, Fritz Bergner, Sterndamm 199, D-12487, Berlin, Germany.

* **9M2TO** Tex - 21030 - CW - 1031 - Dec. QSL via JA0DMV, Terutsugo Izumo, 2-2-27-504 Akamidai, Kuonosu, Saitama, 365 Japan.



Frank VK2EKY on Lord Howe Island with his Yagi beam in January 1998.

* **XX9ER** Freeman - 21232 - SSB - 0502 - Dec. QSL via PO Box 6018, Macau.

* **9N1FP** Vladimir - 14260 - SSB - 1204 - Dec. QSL via RU6FP, Vladimir Zakharov, Kulakova, 27/2 - 116, Stavropol, 355044, Russia.

* **V73UX**, Dave - 14190 - SSB - 1217 - Dec. QSL via V73AX, Kwajalein ARC, PO Box 444, APO AP 96555, USA.

* **AP2JZB** Bab - 14184 - SSB - 1323 - Dec. QSL via Jahanzeb Arbab, House 13, Street 15, Khayaban Tovheed Phase V, Defence Housing Authority Karachi, Pakistan.

* **ZP5MAL** Juan - 14241 - SSB - 0950 - Dec. QSL via Dr Juan F Duarte Burro, PO Box 34 1209, Asuncion, Paraguay, South America.

* **T88KH** Hide - 14040 - CW - 1004 - Jan. QSL via JM1LJS, H Kai, 915 Takata, Kohoku, Yokohama, Kanagawa, 23800, Japan.

* **CO2WF** Winston - 14229 - SSB - 0728 - Jan. QSL via VE2EH, Pierre Gagnon, Apt 8 6863 Beaubien East, Montreal, Quebec, H1M 3B2, Canada.

* **9N1AT** Hara - 14195 - SSB - 1057 - Jan. QSL via JH8XIX, Shigemi Harada, 30-38 Midori Gaoka, Kitami, Hokkaido, 090 Japan.

From Here and There and Everywhere

* It is with deep regret that I report the passing of Ken Stevens VK5QW. Ken was not heard recently on the bands because of his failing health. He was a great DXer, well known not only in Australia but also overseas, especially in the United States. Ken was a humanitarian and supporter of many

good causes without seeking publicity. He was a strong supporter of this column and, whilst I never met him in person, I will never forget his friendship and wise counsel. Ken's great sorrow as a DXer was that he never worked North Korea P5. Vale, Ken. Have great DX in the sky.

* **Azerbaijan.** This republic of the former Soviet Union celebrated the 80th year of its establishment as an independent nation by using the special prefixes of 4JA and 4KA.

* The QSL manager for TZ6JA is JA3EMU, and not JA3EMJ as reported earlier. JA3EMU is Toshiyuki Tanaka, PO Box 4, Katano, Osaka 576, Japan.

* An interesting callsign, 1X5AA was heard in the middle of February on 15 metres CW, causing a big pile-up. The operator was Hamzat RW6PA who was transmitting from Grozny, the partly destroyed capital of the rebel republic of Chechnya, using the prefix 1X5 which most likely is not approved by the ITU.

* The "European DX Net", due to the improved conditions, is again active on 14243 kHz on Saturdays and Sundays around 0600 UTC.

* **VI6EWT**, a special callsign, commemorates the 120th anniversary of the opening of the East-West telegraph. The callsign was used by the Northern Corridor Radio Group VK6ANC during the John Moyle Memorial Field Day contest, 21-22 March 1998, on HF, 2 m and 70 cm from Eucla, WA. After the contest, the special callsign was aired on HF bands, using both SSB and CW, for a further two weeks from Perth, WA. QSL via VK6ANC, Northern Corridor Radio Group, PO Box 244, North Beach, WA, 6920.

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* Ed **K8VIR/ZL4** started sending out his special QSL cards to those who worked him when he was in the "Fjord County".

* **Amsterdam Island - FT5Z**. Mehdi **F5PFP**, who co-ordinated the last weeks' activities of **Eric FT5ZG** in December last year, hopes to visit Amsterdam Island as a DXpedition in December this year. Being on a DXpedition, and not being part of a scientific team, will give Mehdi ample time to give many **VK/ZLs** a new country if the propagation is right.

* **Kingman Reef - KH5**. Chuck had a short 24 hour visit to this desolate coral reef and made many **VKs** happy with a QSO. An unexpected fishing vessel travelling from Palmyra (which is about 35 miles away from Kingman Reef) to the reef transported Chuck there. Most of the reef is submerged, but a strip of packed clam shells, about 185 metres long and about 6-10 metres wide, is about four metres above the high water level. This is where Chuck landed with his Zodiac, carrying his 20 and 40 metre dipoles, a small tent and his radio gear. I heard him say that he intended to go without sleep until the boat returned to pick him up. QSL via Mark D McIntyre Sr **WA4FFW**, 2903 Maple Ave, Burlington, NC 27215, USA.

* **Armenia - EK**. Sergei **EK4JJ** is now active as **4KI700JJ** to celebrate 1700 years of Christianity. QSL via **GW3CDP**.

* **Bahamas - C6A**. Dick **C6A/N4RP** reminds everyone that the correct and only QSL route for contacts with him for the past several years is PO Box 030323, FTL, FL-33303-0323, USA.

* **Vietnam - Rolf XV7SW**, having served four years in Vietnam, has returned to Sweden. If you still need a card from him, send your card to Rolf T Salme, Korpstigen 5B, S-13551, Tyreso, Sweden.

* **Wake Island - KH9**. During the first week in March four USA operators activated this island under their own call signs /KH9. QSLs to be sent to Robert Pond **WA4YBV**, 9 River Cove, Portsmouth, VA 23703, USA.

* The **8Q7AA** DXpedition logged more than 17,000 QSOs. Send your card to Steve Thompson **N7TX**, 119 E Jasmine St, Mesa, AZ 85201 - 1811, USA.

* **Zbig-Frank VK9EKY** advises that he started QSLing on 21 February after receiving his cards from the printer. His QSL address is via **7J6AAK/2**, Frank Z Murdzia, 3-8-41 Shijimizuka Hamamatsu-City, Shizuoka-Ken, 432-8018, Japan.

* **Deal BA4TB** advises that his QSL manager is **9A2AJ**.

* **Harv XU2FB** is now active with the unusual callsign of **XUF2B**.

* **Antarctica - KC4US**. The operation of military calls like **KC4USV**, **KC4USX** and

KC4USL, active during the last few years, came to an end on 11 February. Operation "Deepfreeze" and its support group, Command US Naval Support Force Antarctica, held a flag lowering ceremony at McMurdo Station.

* **Alaska QSL Bureau**. The new address for the Alaska QSL Bureau is PO Box 520343, Biglake, Alaska, 99652, USA.

* **Spratly Islands - 9M0C**. The UK Chiltern DX Group closed this station at 2200 UTC on 23 February. They had made 64,700 QSOs, including 975 on 160 metres. This was an excellent, disciplined operation using first class CW, with clear and excellent indication of the callsign and instructions re "listening up".

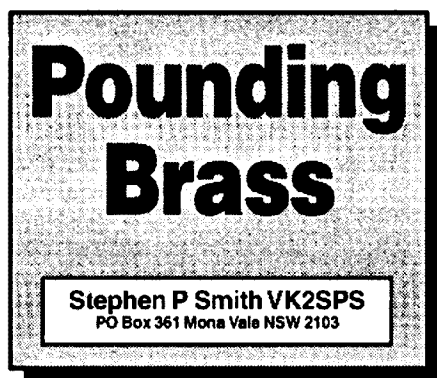
QSLs Received

9N1FP (5 w from **JM2HBO**); **J6/PA3EWP** (4 m - **PA3ERC**); **JT1FBT** (15 m - **NI7T**); **3V8BB** (2 w - **JF2EZA**); **T94B** (9 m - **N9JR**); and **R1FJR** (4 m - **F5PYI**).

Thank You

My gratitude goes to those who "keep the flag flying" by supplying me with a lot of useful information. Special thanks to: **VK2EFY**, **VK2ICV**, **VK2KFU**, **VK2TJF**, **VK2XH**, **VK2ZRH**, **VK4BAY**, **VK4MZ**, **VK8DK**, **VK9LX**, **K8VIR/ZL4**, the *ARRL Letter*, *QRZ DX*, *The DX News Letter*, *The 425 DX News*, and **SSIDXG**.

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Morsum Magnificat, the official Morse magazine of the United Kingdom, will cease publication at the end of the year unless someone steps forward and takes over from

Tony Smith **G4FAI** and Geoff Arnold **G3GSR**.

I'll keep my fingers crossed that somebody will be found before the year is out and that the publication will continue for many more years to come. All the best to Geoff and Tony for your continued support over the last couple of years.

The intended article on Morse examinations will appear in May's issue. Instead of this, I've included a list of scrambles which should see you out for the remainder of the year. The scrambles are of one hour duration and are run by the "CW Operators QRP Club" (thanks to Ian **VK3DID** for the updated list).

Scrambles 1988

No	Date	Frequency and Time
86	16 April	80 Metres 1000 UTC
87	27 April	160 Metres 1000 UTC
88	17 May	20 Metres 0600 UTC
89	21 May	80 Metres 1000 UTC
90	18 June	80 Metres 1000 UTC
91	16 July	80 Metres 1000 UTC
92	19 July (Sunday)	40 Metres 0600 UTC
93	20 August	80 Metres 1000 UTC
94	24 August (Monday)	160 Metres 1000 UTC
95	17 September	80 Metres 1000 UTC
96	20 September (Sunday)	20 Metres 0600 UTC
97	15 October	80 Metres 1000 UTC
98	15 November (Sunday)	15 Metres 0500 UTC
99	19 November	80 Metres 0930 UTC
100	17 December	80 Metres 0930 UTC

160 Metres = 1815-1820 kHz

80 Metres = 3525-3535 kHz

40 Metres = 7020-7028 kHz

20 Metres = 14050-14060 kHz

15 Metres = 21125-21135 kHz

10 Metres = 28155-28165 kHz

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Improved Conditions

Over the past weeks we have had significant improvement in propagation, especially on the higher frequencies. After an absence because of low sunspot numbers, 17 and 21 MHz have been producing some signals. It is also very apparent that many users have not been using these frequencies. The 13 metre broadcasting allocation is very sparse. I do wonder if these channels will again roar into life.

The 11 metre allocation between 25600 and 25700 kHz has been virtually abandoned. The BBC UK senders and Radio France International mainly utilised this allocation for re-broadcasting to Africa and the Middle East. Some low powered FM and AM studio-to-transmitter links have been heard up in this allocation, mainly in the USA.

Satellite TV Crashes in SE Asia

The current Asian economic crisis has impacted on satellite television, particularly in ASEAN countries. Many transponders are silent as the operators can no longer afford them. Satellite receiving equipment has also become so expensive that the market for these has dried up. This will mean that many international broadcasters, who were depending on satellite TV feeds, will have to dramatically revise their strategy. Clearly, inexpensive short-wave receivers will be used to obtain international programming instead of satellite technology.

Digital Broadcasting Problems

Broadcasters and receiver manufacturers have recently been considering digital technology to replace analogue modes.

There are several competing digital platforms, but manufacturers are somewhat hesitant to get involved in mass production until a clear standard emerges. There are primarily two major systems that are incompatible. One is Eureka 147, a European system backed by the EBU and major manufacturers. The other one is an American Direct broadcasting model. The Americans will not allow the Eureka system in their markets and the Europeans retaliate by not permitting the American system into Europe.

Development of Eureka 147 is advanced while the American system is still in the experimental phase. A DBS satellite is scheduled to be launched later this year, or in 1999, with 100 channels. Primary markets are supposed to be Africa and Asia. Yet it could be an economic graveyard as the cost of a specific receiver would be beyond the reach of an ordinary person.

The European system will naturally focus on that area which is developed and

Spotlight on SWLing

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economically stable. Both systems heavily rely on sets being available at a reasonable price. As mentioned earlier, manufacturers are hesitant to commit themselves because the technology will initially be expensive.

The Americans are well advanced on another digital modulation system utilising the existing AM and FM band allocations instead of direct broadcasting satellite systems. There has been quite a deal of media hype that audio quality would significantly improve compared to existing analogue modes. The amount of required bandwidth remains the same. Digital compression techniques have made this feasible.

This proposed model will probably come to fruition as there are quite a number of hassles with DBS, such as reflections, multipath distortion, and difficulty in ascertaining where the satellites are, etc. Using the existing infrastructure makes it economically feasible for broadcasters and manufacturers.

There has been some experimentation with digital broadcasting over short-wave. The VOA, in co-operation with the JPL Laboratories in Pasadena, has conducted some testing of a prototype from the Delano senders. Deutsche Telecom has also been developing a system which has analogue and digital on adjacent channels. This last system has some merit, as the changeover is likely to take some time. However, digital broadcasting over short-wave is still an unknown quantity. Although there is some slight improvement, deep fading is still a problem.

Tahiti is back on Short-wave!

The French Polynesian Island of Tahiti has been heard again after an absence of about 12 months. Formerly, it was drifting about on 15165 kHz +/- . Now, a brand new sender has been well heard here in the South Pacific on 15170 kHz. This appears to be the sole frequency and it is operational there for 24 hours. From 1000 UTC until about 1700

UTC it relays a satellite feed from Paris with local programming for the rest of the day.

I remember listening to the authentic Polynesian music in the mid-afternoons. Probably now they broadcast Rap or Heavy Metal instead. It has been a while since Radio Noumea left short-wave. That was another easily heard station here as it was on 7170 kHz. Now, Noumea can only be heard on 666 kHz when the ABC in Canberra has a deep fade.

Short Snippets

No news yet on Radio New Zealand International. The future is unclear as the NZ Government is reviewing funding for the continuation of the service. Incidentally, Wellington is easily heard on 17675 kHz from 2257 until 0500 UTC.


Radio Canada International was also pleased to receive continued funding for international broadcasting for another three years. This will allow them to update their facilities. More effort is to be placed on Internet Real Audio as this has proved to be quite popular.

Deutsche Welle has also concluded an agreement to broadcast to SE Asia via the Kranji transmitters in Singapore. As you may be aware, all former BBC transmitting sites were privatised and there was a management buyout of the external service senders. This has opened up these sites to relay agreements with other broadcasters, such as RAI in Rome and Radio Japan, now known as NHK World, which have been using Kranji for some years. Now, DW will be using the site between 2300 and 2350 UTC on a 7 MHz frequency.

Don't forget that most of the Northern Hemisphere went on to daylight saving on 28 March until the end of October. The majority of international stations made their frequency alterations at that time to take account of propagation. North America goes on to Daylight Saving on 26 April. Please note that there is one Canadian province that does not alter their clocks. I think it is either Saskatchewan or Alberta.

Well, that is all for April. Until next month, keep listening and 73.

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The Voice of Russia World Service has been transmitting an English language program on 7.100 MHz in the 0445 to 0600 UTC time slot. It appears to be aimed at VK and ZL.

Observers are asked to monitor this transmission and, once verified, either contact VOR direct QTHR, or send details in the next regular report to their Intruder Watch Co-Ordinator.

I am well aware of complaints reaching this intruder, and the Russian Chief of Broadcasting has complained about them, saying there is no breach of the regulations.

He needs to receive further complaints to convince him that VOR is broadcasting consistently on 7.098 MHz – all of our receivers can't be wrong!

In another hot spot of intrusion, a push is underway to target positively identified Indonesian intruders. More IW observer log entries are needed on these with as much "off air" information as possible.

Intruder Watch

Gordon Loveday VK4KAL
Federal Intruder Watch Co-Ordinator
Freepost No 4 Rubyvale QLD 4702
VK4KAL@VK4UN-1
Tel: 07 4985 4168

Ideally observers, through careful listening, can identify the station by its callsign, announced location, mode of transmission, type of program, and whether a male or female announcer.

Broadcasters are usually not hard to identify because they are required to identify themselves every hour, usually on the hour. Have a tape recorder running to help ID them.

There is also still a large number of "Asian" intruders being reported. The languages are difficult to separate, and there are many dialects.

The most commonly used language by Indonesian intruders is Bahasa Indonesia, a form of Malay. With improving band conditions, it is possible to hear local Indonesian broadcast stations using this language.

A number of Morse code messages in code groups are being reported. Very few of this type of message originate in Region 3. Most are from the Region 1 area with the Russians being the most reported.

My thanks to the Region 3 Co-Ordinator, ZL1CVK, for this information.

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National co-ordinator
Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org
AMSAT Australia net:
Control station VK5AGR
Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.
Frequencies (again depending on propagation conditions):
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Secondary 3.685 MHz (usually during winter).
Frequencies +/- QRM.
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AMSAT

Bill Magnusson VK3JT
RMB 1627, Milawa VIC 3678
e-mail: vk3jt@amsat.org

New Edition of An Old Favourite

AMSAT-NA recently made the announcement: "AMSAT is pleased to announce the arrival of the new *Satellite Experimenter's Handbook*, authored by Dr Martin Davidoff K2UBC. This brand new edition contains valuable information on satellite operating, types of antennas including articles on building your own equipment, software, satellite Internet sites, profiles of all the current active satellites and much more. This edition has 375 pages and is filled with information, including how to prepare for the new Phase 3D satellite".

The book's first edition has certainly made its mark in amateur radio satellite circles, winning a place on the bookshelves of newcomers and old-hands alike. This new

edition should become a must for all amateur radio satellite buffs. Check local sources; it should be on the shelves by the time this goes to print.

All You Ever Wanted to Know About InstantTrack

I have been associated with amateur radio satellites since OSCAR 1, and the program that has made the broadest impact and earned the title "ubiquitous" has undoubtedly been Franklin Antonio's timeless *InstantTrack*. Apart from a few cosmetic patches designed to keep up with computing advances, version 1 runs as well today as it did when it first took the satellite scene by storm in 1989, a great tribute to the author.

AMSAT VP, Paul Williamson KB5MU who was originally responsible for writing the "OrbitDRV" TSR accessory, announced recently via AMSAT News Service that he has just completed and published a set of FAQs, or frequently asked questions, for *InstantTrack*. You can find them on the AMSAT-NA world wide web site, or as a downloadable document at the AMSAT FTP site; the file is about 40 Kbytes. As a text file it contains much valuable information. It is a compendium of all the questions (and answers) you would ever be likely to ask about the operation of *InstantTrack*. It has many links to other web sites and for this reason is probably most valuable if browsed on-line.

Worrying News from Guatemala

Earlier this year the Telecommunications Authority in Guatemala auctioned off four frequencies between 430 MHz and 435 MHz for commercial use, despite their use by amateur radio operators in that part of the world. Amateurs in the region have been trying to convince authorities not to auction spectrum that is shared by amateurs to commercial users for over a year but, as is often the case, the money that could be gained through such a frequency auction spoke much louder than reasonable arguments by hams against the selling of spectrum rights to the highest bidder.

Mexico also recently lost UHF amateur band spectrum to commercial interests, and this appears to be a disturbing trend. Although the 430 MHz to 435 MHz spectrum loss in Guatemala does not directly affect OSCAR satellite communications, a precedent has now been set. There is no guarantee that frequencies within the 435 to 438 MHz UHF amateur satellite sub-band will not be auctioned off to the highest bidder in the future.

The implications of frequency auctions involving spectrum used by OSCAR satellites are staggering. While commercial interests buying rights to UHF spectrum are primarily concerned with short-range communication services, it is well known that even low-power transmissions can be relayed half a world away via a transponder carried on-board a communication satellite in earth orbit.

The situation is not all doom and gloom, however. Frequency allocations used in amateur radio satellite communications did fare well at the World Radio Conference held in Geneva, Switzerland late last year. WRC 97 delegates did agree to upgrade the Earth Exploration Satellite Service from secondary to primary at 1215 MHz to 1300 MHz, which should have only minimal impact on amateur use of 1240 to 1300 MHz, while the presence of these satellites reduces the possibility that other, less-compatible services might later be introduced into this band.

From "SpaceNews".

Electrical Storms and Your Equipment

Geoff VK4GWC describes a problem that will have nagged at us all from time to time.

Have you advised the ACA of your new address?

What to do when an electrical storm approaches? In Geoff's words, as uploaded to KO-23: "Hello all, this message describes the breakdown of my KR5400 controller which, based on the circumstances, is presumed to have been caused by an electrostatic discharge during a thunderstorm. As the severity of damage caused by such discharges varies widely, I doubt if there are any lessons to be learnt from this report other than the obvious one. Nevertheless here is the report for anyone interested in the technical nature of someone else's minor equipment calamity.

"Circumstances: At midday on 23 Dec 98 a short-lived but violent storm (ie lightning discharges closer than 1000 m) passed directly over my QTH. All antenna feed lines and masthead pre-amps were disconnected from equipment before the storm arrived and all power outlets in the radio room (my study) were isolated by a single DP switch. The KR5400 AZ-EL was, therefore, switched off, but the rotator cables were NOT disconnected from the controller (although line connectors are provided for the two cables).

"Symptom: When the controller was switched on that evening both meters went hard full scale.

"Fault Finding: Rotators OK electrically and mechanically. Masthead pre-amps for 2 m and 70 cm OK. No evidence of burning inside controller. Q2 (UA7808C) was U/S. This voltage regulator provides 6 V to the rotator position pots. Q1 (2SC2120, a NPN

transistor) and D2 (UZ-110, an 11 V Zener diode) were U/S. These combine to provide a regulated 10 V + Vcc for the op amps. Q3, Q4 (4558N dual op amps). Only one of the four op amps had normal voltages. The other three had an output voltage of about 9.5 V, including the two meter op amps (which explains the symptom mentioned above). In-circuit checks were made on all other semiconductors without finding fault.

"Repair: U/S semiconductors were replaced with same or equiv. parts and the controller was returned to normal operation. 73, Geoff VK4GWC".

AO-10 On the Move Again

OSCAR 10 is moving into the northern hemisphere again. By the time this goes to print its apogees will be occurring at around 11-12 degrees north latitude. The northerly excursion should continue until the end of 1998 when it will peak at about 27 degrees north before moving south again to cross into the southern hemisphere at the end of 1999, peaking again at about 27 degrees south latitude a year or so after that.

The moral to the story is that now is about the best time for those of us in southern Australia to make contact with European and North American stations. Don't wait too long or the mutual windows will become shorter as the cycle wears on. Reports indicate that many stations are still using AO-10 and, although conditions are variable, good contacts are there for the well equipped and patient operator.

ar

Over To You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Practical Examinations

I was interested to read the comments of Neil Pickford VK1KNP in the OTY section of February's *Amateur Radio* magazine. His are not the first suggestions I have read on a more practical examination system, but I was intrigued at the suggestion for a fault finding component to the exam.

How would this be achieved? Perhaps what is being suggested is to issue broken transceivers, and mark exam candidates on their ability to identify and fix faults?

What is not being appreciated in the argument for a practical test in the amateur exam is that without so-called "black box" operators, the hobby of amateur radio would likely cease to exist. At the end of the day, whether or not a radio amateur can or cannot build his or her own equipment, is irrelevant to the hobby.

A better action to stop amateur radio's perceived slide towards its ultimate demise, would be for radio amateurs to take themselves less seriously, and instead of moaning about the hobby, simply get on air and enjoy it.

David Douglass VK2DPD
4 Merino Road
Noraville NSW 2263

ar

Hello Andy Thomas

Those who watched Channel 9 News in Adelaide on 25/1/98 were fortunate to see SA VHF Group Member and WIA Council Secretary, Graham Wiseman VK5EU, interviewed about Adelaide astronaut Andy Thomas and his proposed operation from MIR, complete with "mock" calling VK5MIR (Andy Thomas was still on board the Shuttle so operation would have been via W4SIR, etc). Great bit of publicity for us and Graham did us all proud. The interview showed professionalism from our side; after all, Graham has been involved with AMSAT and Apollo projects, and was thus a logical choice.

But there is more to it. The story has leaked from our amateur sources at NWS9 here, since confirmed by others, that Graham was the emergency fall-back location after the Channel 9 crew had travelled to another prominent amateur, ready and able to establish communications with the Shuttle/MIR on 145.985 MHz. Apparently the contact failed due to radio equipment failure on the ground. As there would only have been a couple of passes for the day, the Channel 9 news team had to go home without usable "tape in the can". In the end it came out OK, but how unfortunate that equipment failure meant no contact with W4SIR. ... VK5KK.

Since then, on 24/2/98 NWS9 ran another news item, this time featuring VK5 Divisional President, Ian VK5QX, in contact with Andy Thomas.

Also, a message from Rick VK6XLR at Exmouth said that on 24/2 at 2025 he made contact with Andy Thomas VK5MIR on 145.985 MHz. It was only a four minute contact but he considered it worth rising at 4 am VK6 local time to make the contact.

Report from the UK

Ted Collins G4UPS said January 1998 was one of the poorest he could remember, with only one major opening, on 12/1. Ted lists a few comparisons: 1998 – countries worked 6, total QSOs 48; 1997 – 21 and 131; 1996 – 17 and 114; 1995 – 24 and 193; 1994 – 11 and 76.

Lightning Strike

Early in February, Gordon VK2ZAB's station suffered severe damage from a lightning strike. A message from Gordon on 6/2 advised of his partial recovery from the damage. Two metres more or less OK: 70 cm QRP. 23 cm QRP. Phone line repaired. Repairs made to antenna change-over relays, pre-amps, power meter, antenna relay sequencer, FT-736 transceiver, computer. TV set still a bit sick. Video recorder replaced by

VHF/UHF

An Expanding World

Eric Jamieson VK5LP
PO Box 169, Meningie SA 5264
Fax: 08 8575 1777
Packet: VK5LP@VK5WI.#ADL.#SA.AUS.OC
E-mail: vk5lp@ozemail.com.au
All times are UTC

insurance. Main problem remaining in shack is solid state 23 cm PA which is shot.

The VK3XPD Report

Wally VK6KZ reports that Alan VK3XPD arrived there on Monday 2/2 from Esperance and left on 5/2 for Wally Green VK6WG at Albany:

"On 3/2 and 4/2 Alan went portable – first to the south and then to the north of Perth. We had QSOs on 3.5, 5.7 and 10 GHz over increasing distances from Karnet 45 km, Two Rocks 64 km and Lancelin 112 km. It was a most enjoyable experience to work from home and not be the portable station in the field. It was also good to give my 3.5 and 5.7 GHz gear a workout!

"Whilst in Albany, before coming to Perth via Esperance, Alan assisted Wally Green VK6WG to modify an ancient Mullard TWT on 7 GHz to provide some power output on 5.7 GHz much to Wally's delight. Alan also went portable and had contacts on 5.7 and 10 GHz with VK6WG."

The Chances of TEP

Roger Harrison VK2ZRH said in an e-mail on 10/2 that he had been monitoring the IPS real-time ionospheric soundings and equivalent oblique ionograms at http://www.ips.gov.au/asfc/aus_hfion_cat.html, and <http://www.ips.gov.au/asfc/current/oblq.html>, respectively, and noticed the continuation of intense Es into this part of February during the afternoons. With the equinox five weeks away, this bodes well for the chances of TEP into NSW and Victoria via Es extensions.

The 3000 km MUF for paths centred on Darwin has regularly been in the 35-40 MHz region, indicating the F-layer north of Darwin, which supports afternoon-type TEP, might well be higher.

The University of Lethbridge ionospheric maps certainly show it to be so; (<ftp://solar.uleth.ca/pub/solar/www/realtime.gif>). The MUF as indicated at Darwin should begin creeping higher as the weeks go on and

the "southern equatorial bulge" in the ionosphere (which creates the conditions to support afternoon-type TEP) moves south with the approach of the equinox.

The University of Lethbridge has a propagation reporting/observation web site at <ftp://solar.uleth.ca/pub/solar/www/caros.html>. A little limited at present, but it's only young.

Six Metre Openings

Scott VK4JSR said that on 13/2 V73AT reported VK4DO at 0515, VK3XQ 5x7 0515, VK4BRG/b 0520, FK1KT 0603 5x5. JK7IKU worked VK7GUN at 0504 5x1.

From Bob ZL3TY: Six metres open 16/2 0453 JA5GJN/4 529, 0503 JA1WLO 529. Many weak JAs heard working VK4s.

Equatorial Guinea

I was surprised to receive an e-mail from Alan Isaachsen 3C5I who will spend several years in Equatorial Guinea, Africa. He writes: *"It seems like a 100 years since we last talked! And you'll never recognise my present call of 3C5I (and KB2WF). I used to be VK5IR and VK5ZEI before 1980, when we tried to keep Geoff VK5TY and Bob VK5MM under control! I seem to remember you on the WIA committee and the newsletter we put out.*

"Geoff GJ4ICD and Neil G0JHC have been a great help and encouragement for me here on six metres. So far, I have two countries, 9H1 and I in the several weeks of band openings.

"I left Adelaide in 1980 for the US and got the KB2WF call in NY before going to TX for 3 years, then to Saudi Arabia for 5 years, back to NJ for one year, then VA for 3 years, Dallas for 5 years, now 3C5 for a few years to see me out the door to retirement. I'm 55 now.

"I have not been very active during this period except in VA and then here again. My favourite band is six metres but I occasionally go to 10 and 12 metres. Although restricted in antenna space, I am determined to make the best of it on six metres in the couple of years here when the solar flux will make it interesting."

Well, that's one of the rewards for writing these notes – one never knows who will suddenly write and tell of their experiences. I remember Alan well from the mid-1970s.

Propagation by TEP

John VK4FNQ said six metres in North Queensland has been quiet. A surprise was the TEP opening to Japan on 20/2, when between 0542 and 0603 the following were worked: JG2VUQ, JA1ETO, JJ2IVP, JA1CPZ, JE1BMJ, JA7MA, JH1WHS, JE1WZF/m, JA7AMK, JA0LTH and JA8CRB/p7. John says he regularly monitors 50.110, 50.200 and 144.100 MHz.

John VK4KK in Brisbane also said that occasional openings were occurring to Japan, with a reasonable one on 26/2 from 0330 to 0400, working all districts except JA8. Another on 1/3 from 0300 to 0430 with JAs working to VK7 and VK8. V73AT was very strong. AH8 is also active. FK was heard on backscatter.

From **Scott VK4JSR**: "*The TEP opening on 50 MHz to JA on 22/2 lasted for more than three hours, with all JA call areas worked (except southern islands, eg: JD). Most signals above S9...just like the old days! The opening was in a typical TEP North/South path, and I heard little outside of that (except 49.750 MHz TV video). The 9MOC expedition was on 50.102 CW working JAs, but no backscatter into VK4.*"

Solomon Islands

John VK4KK advised me that H44 would be activated in March. I asked **Rod VK4JSR** to refer my query to **Trevor VK4AFL**, the proposed operator. Trevor replied that he would activate H44 on six metres for the period 27 to 29 March 1998 inclusive, using 100 watts to a four or five element beam. This visit is seen as a reconnaissance trip in preparation for a two week operation in March/April 1999. Other operators will be VK4BKM and VK4FI. Callsign is under negotiation but will be H44... or ZL1AL/H44.

Many people missed H44 (Solomon Islands) during the last cycle. The area is within Es distance of VK and UK/EU stations will be hoping that F2 comes to light in 1999 to provide them with a new country. I hope to report on the weekend in next month's notes.

Correction

Emil Pocock W3EP advises that there is a small but significant correction to his account of the F2 opening between the US and Australia and New Zealand on 1 January. Because this was the first true F2 of Cycle 23 for US stations, it should be clarified a bit.

"ZL2TPY did work W4DR. ZL2TPY had been hearing W4DR for some time in a pileup as loud as 5x9, but could not attract his attention. TPY then called W6BYA on the telephone to alert him about what was going on and to see if a phone message could be sent to W4DR. W6BYA did this. W4DR then moved off the pileup and easily worked ZL2TPY. All this was on SSB. Then ZL2TPY worked K6QXY and other stations. Thanks ... Emil."

Mid-Winter Contest

Rod VK4KZR recently suggested a mid-winter field day. Would you like to participate? Chas VK3BRZ says that he can be counted as a starter, also other Geelong

Amateur Radio Club members VK3TU, VK3XLD, VK3ASQ, VK3DQW, VK3KTD and VK3ZPO. It was discussed at a recent Club meeting, with the outcome suggesting a one-day event in winter, possibly on a Sunday.

I see nothing wrong with the idea. Operators may need to run the gauntlet of the weather, but what's new about that for field day operations! I tend to doubt whether too many operators would take equipment for 50 MHz to 10 GHz inclusive for a one day event. In the hope that more may participate, would it be worthwhile limiting the event to operating on 50, 144 and 432 MHz, plus perhaps 1296 MHz? Or simply 144 and 432 MHz?

Your thoughts to me. Do we ask the Federal Contest Co-ordinator to consider such an event, or is another person prepared to act as the co-ordinator? For winter this year time is running out. I will seek further responses by posting the idea on the VK-VHF Reflector.

Coloured QRA Density Maps

From **Chris G3WOS**: Joe N3AT and Michael NV3Z have a terrific web site for automatically creating azimuth projections. They have taken the QRA database created by Max DL4MDQ (max.wild@t-online.de) and plotted them on an azimuth graph. They are terrific.

Guess which grid square has the highest density of six metre hams. Go to: <http://www.uksmg.org/qramaps.htm> and take a look.

Two Metres and Above

Over the period 21 to 24 February, enhanced conditions occurred across The Great Australian Bight, resulting in a number of interesting contacts from VK6 to VK5 and VK3. Wally Howse VK6KZ gave me an overview of proceedings as follows:

"At 2140 UTC on Saturday 21/2 the 144 MHz VK5VF beacon was heard and this disappeared into the noise at 2200. However, at 2335 I worked Phil VK5AKK, later Roger VK5NY on 144 MHz. Cec VK6AO worked VK5AKK on both 144 and 432 MHz at about 2340. VK5NY worked on 144 at 0032 Sunday 22/2 and Col VK5RO was heard but not worked (Col using 8 watts). Alan VK6ZWZ worked VK5NY on 144 MHz. Others active and working the VK5s were Bill VK6AS Esperance and VK6KDC Manimup.

"VK5VF was still audible at 0110 UTC Sunday 22/2. No signs of 432 or 1296 beacons from Adelaide nor of 144 beacons from Mt Gambier or Geelong.

"I first heard the Mt Gambier 144.550 MHz beacon at 2130 UTC 24/2, but there was

no sign of the Adelaide beacon.

"Col VK5DK in Mt Gambier was worked on 144 MHz by VK6KZ, Cec VK6AO, Don VK6HK, Ray VK6WU and Alan VK6ZWZ. Cec heard an identifiable whistle from Col on 432 but no QSO with him despite the then reception of the Mt Gambier 432.550 MHz beacon.

"Russell VK3ZQB was worked initially by Cec VK6AO on 144 MHz and later also by Don VK6HK, Wally VK6KZ and Alan VK6ZWZ. Russell was then worked on 432 MHz by all of these VK6s.

"Russell also heard Cec VK6AO on 1296 MHz but was not heard by Cec.

"Tests with Eric VK5LP and David VK5KK on 144 MHz were unsuccessful.

"Bill VK6AS from Esperance was successful on 144 MHz to Russell VK3ZQB during this and for quite a time after the signals in Perth were lost.

"Wally VK6WG in Albany was 5x9+ during our usual Perth/Albany sked at 2330 UTC. He reported at about 0000 UTC not hearing anything from Adelaide or Mt Gambier.

"Once again it appears we had the Perth to Mt Gambier path with no Adelaide and no Albany/anything - last observed in Feb 1996.

"The beacons on 144 and 432 at Mt Gambier probably disappeared at about 0100 as did the Esperance beacon on 144.568 MHz. The Esperance beacon is emerging as a very good indicator of the longer path - with two openings to VK5 from Perth it has been 599 - enhanced over its usual level for the 600 km path.

"Wally Green VK6WG heard Roger VK5NY's keyer on 1296 MHz for most of yesterday (23/2) and worked him about 1300. Wally was up late this morning after a very early start yesterday so didn't give a report on Albany conditions but Bill VK6AS worked David VK3AUU and Col VK5DK among others.

"One of the delightful by-products of the openings was the rekindling of interest by Reg Galle VK5QR. Reg dusted off his 1296 MHz gear and heard Wally Green on Monday morning (22/2)! I have been urging Reg to use 5.7 GHz again. It would be nice if those two oldies (both 87 this year in about August) could make it across the Bight like they did in the 'old days'!"

Wally adds: "Anyone wanting a phone call when beacons are heard in Perth please let me know and I will be happy to oblige. Provide phone number and any caveats regarding late or early hours of day."

On 22/2 around 2145, Max VK3TMP worked Adrian VK2FZ/4, via a meteor on 144.200. Max was looking for aircraft enhancement contacts when a long burn

occurred and he was called by Adrian. Initial reports were 5x1, then 5x5, then 5x8. A long burn but not long enough for the other eager listeners to make a QSO.

At 2155, Max broke in on a QSO between Des VK3CY, Barry VK3TBM/m and Ron VK3AFW to announce that Bill VK6AS and Roger VK5NY were coming through quite strongly on 144.150. Just after 2200 Ron VK3AFW and VK3II worked Bill. Bill peaked 5x9 at Ron's QTH before settling to 5x6.

Gordon VK2ZAB reports that two metre signals from VK5AKK and VK5NY were readable in Sydney at levels up to S6 from 2235 on 22/2 to 0038 on 23/2. Contacts made were: VK2BBF to VK5NY; VK2ZAB to VK5AKK and VK5NY.

He said: "As far as I am aware a 70 cm contact has never been made between Sydney and Adelaide area. This is still the case as, although signals from VK5AKK and VK5NY were heard up to 5x2 by VK2ZAB and traces of his signal were heard by the VK5s, no contact was made. This is entirely the fault of VK2ZAB who failed to allocate proper priorities to repairs to power amplifiers at his station."

Ron Cook VK3AFW said: "Some of the best conditions for a long time prevailed on 22/2 across Bass Strait. On 144 MHz at 2110, Andrew VK7XR was 20 dB over S9 into Melbourne. He reduced power to 1.5 watts and was still S9. He also worked Des VK3CY at Wedderburn on 144, signals about 5x2. Signals to and from Andrew VK7XR on 432.150 were S7 here at 2113, but nothing to Des.

"At around 2157 I worked Joe VK7JG in Launceston at 30 over S9. At 2146 I had worked Col VK5DK in Mt Gambier off the back of his beam. He and Russell VK3ZQB in Port Fairy then worked Bill VK6AS at Esperance, but nothing heard here. David VK3AUU also had a scratchy contact with Bill around 2204; by then just a trace of Bill here.

"The VK7RNE beacon was very strong, Mt Gambier beacon moderately strong, no others heard."

Recognising the good conditions on 22-23/2, Barry VK3TBM headed north towards NSW, operating mobile/portable. All contacts using an FT-290R Mk1 to 20 watt PA, into halo at 1/2 wave above car roof. He said: "I had a rostered day off, so I went for a drive to "site survey" a hill for the John Moyle Field Day. The place is called half a dozen names - Mt Gwynne, Gwynne Hill, Mt Boomanoomana, etc and is located about 12 km NW of Mulwala in NSW. It is 250 metres above sea level, which puts it well above the surrounding countryside. Grid QF24we.

Table 1

Time	My location	Contact	RS	Distance
22/2:	2140 Heidelberg	Ron VK3AFW	Oakleigh, VIC	5x9
		Des VK3CY	Wedderburn, VIC	5x2 200
		Max VK3TMP	Somerville, VIC	5x9 55
	2210 Yan Yean	(5 km south of Whittlesea; 30 km N of Melbourne)		
		Rob VK3DEM	Bairnsdale	5x3 225
		Roger VK5NY	McLaren Vale, SA	5x5-5x9+ 650
	2300 Seymour	Roger VK5NY	5x1	650+
	2330 10 km south of Shepparton	Roger VK5NY	5x1	650+
		Phil VK5AKK	Adelaide, SA	5x1 620
23/2:	0152 Mt Gwynne,	NSW QF24we, between Cobram and Mulwala		
		Rod VK2TWR	Nimmitabel, NSW	4x1-5x3 310
		Bob VK3AJN	Wangaratta, VIC	5x9 50+
		Len VK3BMY	Numurkah, VIC	5x9+ 48

"The good news is that the hill is ideal for my John Moyle endeavours. There is one single radio installation, which may be a two metre repeater, but it didn't cause me any problems noise-wise. If it is a repeater, local info suggests it isn't used much. It seems like my biggest problem may be finding a flat spot to throw down my swag!

"I could hear all of VK5NY's attempts to work Gordon VK2ZAB on 70 cm, while I was travelling from Seymour to Strathmerton, VIC."

See Table 1 for Barry's mobile/portable contacts.

The Beacon Network

Reading the above reminds me of the continuing usefulness of the beacon network, with the recent most beneficial one being at Esperance in VK6, just in the right place to provide a form of indicator when east/west conditions have not allowed the Albany beacon to be heard.

I never cease to marvel at the reliability of the path between VK5LP at Meningie and VK3RGL/b at Geelong on 144.530 MHz, a daily 600 km path. I thought I would give it the acid test recently when the temperature here soared to 41 degrees. It was checked three times during that hot afternoon and it was always there, strength S1-2. Great stuff! It also serves to tell me that those useless galahs, who inhabit my antenna system each morning and evening, have not yet destroyed my feedline.

The new Mount Gambier 432 MHz beacon VK5RSE on 432.550 is also a daily occurrence, although at a lesser distance of around 270 km. I find the VK5VF 1296 MHz beacon a comfortable S5 and less prone to QSB than the one on 432 MHz, distance 110 km. Fascinating things, beacons.

Closure

Whilst six metres has been relatively quiet, the annual upsurge in higher bands activity

has been evident during February. This year, the absence of relatively slow moving or stationary high pressure systems in The Bight has not provided any sustained propagation enhancement, so 10 GHz contacts have not eventuated. But they will come again!

By the time you read this we will be in the middle of the autumn equinox, so be aware of possible F2 and TEP contacts. However, remember that if everyone is listening all the time no contacts will be made!

Closing with two thoughts for the month:

1. The Lord gave us two ends - one to sit on and the other to think with. Success depends on which one we use most, and
2. Experience is what you've got when you're too old to use it!

73 from The Voice by the Lake

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Who Will Get the Mandate?

As we reported in the March *Amateur Radio* VK2 Notes, this month is the time when you will find out who your representatives are for the next year on the NSW Council. The date set for the Annual General Meeting is 18 April 1998 at Amateur Radio House, Parramatta. It will commence at 1100 local. Elections for the VK2 Divisional Council are an annual event. They are a good indication of interest in the workings of the Institute, which is normally gauged by the number of people who bother to return their completed ballot papers.

Return of Ballot Papers

Completed ballot papers should be returned to the Parramatta office, using the reply paid envelope, to arrive no later than last post on Friday, 17 April 1998. They will then be counted and the returning officer will announce the results at the AGM on the following day. Please note that it is very important the instructions forwarded with the ballot papers and the proxy forms are strictly followed, otherwise your vote could be informal. The AGM starts at 1100 local on the Saturday at Amateur Radio House in Parramatta.

Trash and Treasure

The last Trash and Treasure should have happened at Dural in March, and should have been a repeat of the one at the end of November 1997 (weather and natural acts permitting). These events are usually well attended and have many bargains, plus a tour of the VK2 broadcast facility. Also at these events, the WIA VK2 Division bookstall goes along.

Responses so far this year have been quite good with the money for the hire of tables and from donated equipment and parts going to the WIA general fund. Organiser, Pat Leeper VK2JPA, told me to remind you that, despite the fact amateurs traditionally have short arms and long pockets, it's a good place to go along and socialise, meet your friends, have a chat and go away with a bargain.

Wyong Field Day

Speaking of sales, Pat also tells me that the combined efforts of the deceased estates and WIA bookstall at the Wyong Field Day this year grossed more than \$9,000. This was a very good effort, thanks to Michael Corbin VK2YC and his wife Cathy concerning the preparation and presentation of the deceased estates equipment. Thanks Michael for all the work you put in with the gear.

Other Councillors present on the Day included Eric Fossey VK2EFY, Eric Van De

WIA Divisions News

Weyer VK2KUR, Owen Holmwood VK2AEJ, Pat Leeper VK2JPA, Ken Westerman VK2AGW, Brian Kelly, VK2WBK and your faithful scribe David Thompson VK2NH. Other helpers were office stalwart Pixie Chapple VK2KPC and her husband Henry, as well as Bob Yorston VK2CAN. Nice to see Federal Director Peter Naish VK2BPN drop in to give a hand.

Affiliated Clubs News

Affiliated Clubs Officer Ken Westerman VK2AGW reports that the first Affiliated Clubs Conference for 1998 will be held at Amateur Radio House, Parramatta on Saturday, 16 May. If you wish to attend, agenda items and names of intended delegates are required at least two weeks prior to the conference. There will be lunch and dinner at a moderate cost (which will be advised). Coffee and tea, plus biscuits, will be provided. For further information contact the VK2 Divisional office. The conference will begin at 0900 local. Please arrive at least 15 minutes prior to this for registration.

Membership Renewals

Just a reminder that all VK2 WIA membership renewals are being processed through the Divisional Office at Parramatta. Anyone who has received a renewal notice, but has not yet responded, should forward the notice along with the fee to the VK2 Divisional office of the Wireless Institute at PO Box 1066, Parramatta NSW 2124. Do not send it to the Federal Office.

Correspondence Course

The VK2 Novice Correspondence Course is now available. For more information contact the Parramatta Office. It is a great way to achieve a positive result and gain your amateur radio callsign. There will shortly be a bridging course to take you to the AOC (full-call).

More Information

For more information, contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor,

just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page. If you are addressing e-mail to the office, please do so at vk2wi@ozemail.com.au. There'll be more to report next month, but if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777 or by e-mail to dthom@penrithcity.nsw.gov.au.

David Thompson VK2NH

VK3 Notes**AR Magazine**

The WIA monthly journal is in need of photographs. It relies on contributions from members of photographs for its front cover, and to accompany articles.

Why aren't we seeing photographs from white elephant days and Hamfests, the emerging ARDF group, ATV gang, WICEN Victoria, special event stations, JOTA, field days, packet radio, and plenty of other activities?

The answer is simple. Suitable photographs are not being submitted. The Publications Committee has personally enlisted my help and asked me to mention its plight in these VK3 Notes.

May I suggest to the officials of WIA Victoria affiliated clubs, and WICEN Victoria, that they consider having photographs taken of their events.

The old adage is that a picture is worth a thousand words. A photograph in *Amateur Radio* magazine, along with a few words, is a great way to boost the publicity efforts of any group. It also lets everyone know what is happening in our hobby.

Photographs of individuals "doing things" - receiving club awards or honours, constructing something, just being themselves, or at a public event involving amateur radio - the possibilities are endless.

I am hoping for a good response from VK3 so the Publications Committee can recover from the great photo drought (let's blame that too on the El Nino event) and overcome the "sea of grey" look on many of the pages of *Amateur Radio* magazine.

Disposals Transceivers

Proving to be extremely popular are the Philips FM92 transceivers, fully synthesised and scanning FM mobiles ideally suited for conversion to the two metre band, now available as a membership service at an affordable price.

Listening around the band you'll hear members already using these sets as their mobile or base station rig. Each comes with a

remote head which, in a vehicle, enables the transceiver unit to be mounted out of the way under a seat or in the boot.

The price varies from between \$20 to \$40. The transceivers are sold "as is" with no schematic or other technical documentation available. Country members can buy and reserve a transceiver and have it held according to pick-up instructions. The office cannot arrange freight.

Thank You Recruiters

A number of members have joined up new members in the past 12 months and your support is greatly appreciated. I was reminded of this activity earlier this year when listening on air and hearing a staunch WIA Victoria member ask his contact if he was a member.

The reply was he wanted to join. The member then offered to send him a membership application form, and the result is a new member. From past experience that would not be an isolated incident.

Thank you to those who are supporting WIA Victoria by recruiting new members by personal approaches to individual radio amateurs or making available to non-members the current membership application form.

Telling prospective radio amateurs or non-members about the Internet homepage www.tbsa.com.au/~wiavic is another successful way to help WIA Victoria in its recruitment efforts.

Postal Woes Update

The impact of changes (cost saving measures) in the postal service is now being felt by the WIA Victoria Office. As earlier reported, the mail delivery no longer comes from Ashburton but has been centralised at Burwood.

Mail deliveries previously arrived around 10 am each morning. Now, under the new system, we get mail at an undetermined time in the afternoon, often too late for it to be acknowledged on the day. Correspondence mailed in Caulfield recently took a week to arrive at the office.

WIA Victoria has taken pride over the past five years in promptly responding to the mail it receives. Could members please bear with us because, due to circumstances beyond our control, that level of service is now difficult to achieve.

Jim Linton VK3PC

VK5 and VK8 Notes

That Time of Year

Well, almost a year has gone by with the current Divisional Council in office. At this time of the year the VK5 Division holds its Annual General Meeting (AGM). One would

have hoped that an election of Council members would have been held; however, there were insufficient nominations received to require an election. It is natural that the question "WHY?" is asked regarding this. It may be that everyone is satisfied with the operation of the current Council or it may also be that apathy reigns supreme. I certainly hope that it is not the latter.

Irrespective of the above, there is still a great need for more work to be done in connection with the operations of the Division and it is also very necessary that the membership keep in communication with the Council by letting us know what your wishes are for your organisation. The message could be getting a bit worn now; however, it is still the same. I encourage you to pass on to us your ideas as to what you want done. We also want feedback from you as to how you think we are doing. Without any of this we are working to a large degree in the dark. Your Council does not pretend to "know it all" and is anxious to hear from you.

Work by the "Constitution Committee" towards production of an amended constitution is still progressing as are arrangements for a Clubs' Convention.

The AGM will be held at the Burley Griffin Building commencing at 7.30 pm on Tuesday, 28 April. I look forward to seeing a good attendance of members.

The Federal WIA

In the weeks prior to our own AGM, the WIA Federal Convention will have been held (late March). Suffice to say that I hope it brings many positive changes.

The VK5/VK8 Division is nominating a well known and capable member for the office of Director and is also nominating a person for the office of Federal President.

I have referred to concerns held by the VK5/VK8 Division about Federal WIA matters on the VK5WI Sunday broadcast.

You may rest assured that the VK5/8 Division will do all in its power to bring about a satisfactory outcome at the 1998 WIA Federal Convention.

Andy and the Adelaide Symphony

The above line may have you wondering whether someone is becoming mixed up with extraneous activities or has perhaps lost the plot. However, here we have an interesting sidelight to retail.

I received a call from the Education coordinator of the Adelaide Symphony Orchestra (ASO) who placed before me an unusual request. He was aware of the fact that I was in contact with our own astronaut, Andy Thomas VK5MIR aboard the Space Station MIR.

The ASO is to perform at two concerts to be held at the Adelaide Festival Theatre. The theme for the concerts is "Space - the Final Frontier". The performance will comprise music ranging from the "Planets Suite" by Gustav Holst to theme music from "Star Wars", "2001- A Space Odyssey", "The Empire Strikes Back", "Star Trek", "Parade of the Ewoks" and the "Dr Who Theme". Also included in the program will be works by Australian composers, namely Peter Sculthorpe's "Sung Song" and Barry Conynghams's "To the Stars."

At the same time as the music is being performed the audience will be able to view, on a large video screen, pictures and animated graphics showing scenes of such items as planets, meteors, comets, nebulae, etc. Included are excellent photographs taken from the Siding Springs Observatory and a great deal of other material from differing sources.

The suggestion was made that it would be wonderful to have Andy Thomas appear as a special guest to address the audience. It so happens that Andy was made aware to some degree of this idea when he was in Adelaide during the Christmas/New Year period and was enthusiastic.

As a result of this I have been involved with making of arrangements through NASA channels to have a video segment produced with Andy VK5MIR addressing the audience from the MIR space-craft and telling them what it is like to be an astronaut and the feelings that he has on such matters. We are presently awaiting advice from Moscow that the video item has been produced on a television downlink to that area. I was not aware, and was interested to find out, that the Russian television system uses the PAL format. This allows the video to be produced without having to worry about conversion of the format from NTSC (does NTSC actually stand for "No Two Same Colours"?).

This has been an interesting project as it has meant being in touch with NASA authorities from the Johnson Space Centre in Houston Texas, Washington DC, the NASA Representative here in Australia, and to see the authorisation processes in operation for such arrangements.

It is also good to see such a suggestion as described above come to fruition. A certain "Marriage of the Arts and Science".

By the way, I hope that you liked the front cover picture of our very own Adelaide, Australia astronaut on the February issue of the magazine. One major historical fact that seems to have gone almost unnoticed in the media is that we have now had the first instance of the use of an Australian Radio Callsign from Space.

Over the past weeks there have been a number of broadcast radio and television segments, both local and national, dealing with Andy Thomas and amateur radio which have provided good publicity for our hobby. It is certainly hoped that such will continue.

Best regards to all.
Ian Hunt VK5QX

VK6 Notes

FM Field Day - Sept 1998

I almost fell off my chair when I actually received some INPUT! Alan VK6ZWZ has provided information on the WA VHF Group's FM Field Day, to be run from 1230 - 1630 WST on Sunday, 20 September 1998. Please mark this in your diary now. The primary aim is to encourage Limited Novice and Novice operators, hence the contest is limited to the frequencies and modes available to those licenses; 146 - 148 MHz and 433 - 435 and 438 - 440 MHz packet and phone, as well as packet-only between 144.692 - 145.208.

WA VHF Solstice Scramble - June 1998

This looks like fun! It only runs for 30 minutes, between 0900-0930 WST on Sunday, 21 June 1998, which is in the half-hour leading up to the WIA news broadcast.

The idea is to contact as many stations as possible, on as many bands as possible on 50 MHz and above. You'll need to get a copy of the rules from the VHF group, or I can fax them to you; fax your request to 08 9354 8826, or e-mail me for a soft-copy.

Conference of Clubs

The WIA WA Division convened this conference on Saturday, 28 February at CWA House in West Perth. There were 38 attendees, representing WAADCA (Digital Group), the ATV Group, Guides Association, NCRG (Northern Corridors), VHF Group, WARG (Repeater Group), Peel AR Group, RAOTC (Old Timers), SEG (Southern Electronics Group - Albany and surrounds), Busselton and ARSNW (North-West Group, informally), Hills ARG, WICEN, Scout Association, and a historical overview of the WIA in WA.

Some interesting points arising include:

1. 169 members responded to the recent WIA survey, showing the average age of respondents to be about 60 years. Only two members were under the age of 30, most listened to the weekly WIA news broadcast, and most were NOT on the Internet.

2. Methods of attracting new members to the WIA were discussed, including discounted 'introductory' memberships and similar schemes.

3. The possibility of the WIA negotiating a 'group discount' with an Internet Service Provider(s) was raised, with the dual benefit of lower access for WIA members, as well as a contribution back to the WIA from the ISP. This is preferable to the WIA attempting to set-up as an ISP itself.

After lunch, the gathering was addressed by Mr Jack Shelbourn, Manager of the Perth ACA Office. This was quite informative, providing valuable background information on ACA policy and corporate philosophy. Mr Shelbourn later answered questions from the floor, including amateur radio exams, radio monitoring policy, attitude towards amateur radio, and advice on how to seek amendments to the Australian band plans.

For the rest of the meeting, the biggest issue was "how to get more people into amateur radio", particularly younger people. It was argued that amateur radio in its present form simply fails to inspire, excite or attract school students, for whom modern commercial communications and the Internet have removed the mystique surrounding inter-continental communications.

Further, amateur radio has fallen behind the times and is currently running on old technology, technology that is dangerously close to being rendered obsolete as even basic 'Private Mobile Radio' moves into an era of digital transmissions rather than analogue (eg TETRA and APCO-25 DMR). The skills developed in amateur radio are certainly not leading edge, and hence are not perceived as providing an edge in the search for employment. Young men and women can do better by investing their spare time in other technical pursuits.

I proposed that a new grade of license be introduced, which is totally exam-free. This license would be digital only (no voice), and limited to 70 cm and up. The targeted group would be school children studying computing and/or electronics, typically aged 14 to 17.

There was some support for the idea and it was passed as an action point for investigation by Council. What do you think? Before you make up your mind, what is the age of the youngest amateur you personally know? Also, given that anyone can have access to some amateur bands (shared with ISM services) using spread-spectrum devices, would you rather that access occurred as part of amateur radio (strengthening amateur radio's position), or outside of amateur radio (weakening the position?)

Other issues covered included the need for a WIA lobbyist in Canberra, rather than relying on volunteers, the need to truly deregulate amateur radio rather than change

the regulations, and the need for primary band allocations between 144 MHz and 24 GHz. There was also a proposal that the WIA establish a building at Whiteman Park, north east of Perth.

Finally, there was consensus that the conference was worthwhile, and it was hoped that there may be two conferences run each year, one in the country and one in Perth. Wally VK6KZ extended special thanks to Christine VK6ZLZ for her efforts with the administrative arrangements for the Conference.

Did You Know?

Did you know that the entry-level ("4th Class") amateur license in Japan does not require any Morse examination? Maximum output power is 20 W, and operators are allowed all bands and all modes except CW.

Chris VK6BIK will be writing this column next month. Chris' contact details are *chrismor@avon.net.au*, PO Box 838, Toodyay WA 6566, or 08 9574 4060.

Chris Hill VK6KCH

"QRM" News from the Tasmanian Division

The Divisional Annual General Meeting for 1998 has been held and a report on this will be in the next issue of this column. The Division is grateful to Marcomm-Watson for donating an Icom T8 tri-band handheld transceiver, which was the door prize for the dinner. Some lucky ham is very fortunate. Other prizes were donated by Dick Smith Electronics, Active Electronics and the Launceston Tandy outlet.

12 candidates offered themselves for election. There will be new faces on Council as the following stepped down this year: Mike Jenner VK7FB, Barry Hill VK7BE, John Rogers VK7JK and Robin Harwood VK7RH. We thank the retiring councillors for their input on Divisional Council and hope that they will continue to be involved in the future activities of the WIA.

Branch elections were held in February and, in two Branches, there were changes. In the Southern Branch, Andrew Dixon stepped down as Branch President after quite a long stint. Mike Jenner VK7FB was elected to fill the vacancy. Graeme Scobie VK7ZAP is vice-president. John Bates VK7RT continues as secretary and Harvey Lennon VK7KSM as treasurer. Gary Duence VK7JGD is Southern WICEN co-ordinator.

In the Northern Branch, Geoff Wells VK7ZOO stepped down as president and Allen Burke VK7AN was elected. Geoff is vice-president. Secretary is Phil Corby VK7ZAX with Tim Holloway VK7TIM being re-elected as treasurer. Barry Hill continues as Branch WICEN officer.

I do not have any information on the North-western branch elections.

The Domain Activity Centre continues to be a focus for amateurs in the south of the State. Up to a dozen are there every Wednesday afternoon between noon and 4 pm. I briefly called in just prior to the rooms being closed and was pleased to see John VK7JK, who has not been in the best of health.

We were all pleased to hear his cheery voice back on VK7WI on Sunday mornings.

Last month, the North and North-western

branches held a combined meeting at Deloraine at the usual venue. This time, Max VK7KY gave a talk on woodcarving and taxidermy. I believe that VK7ZTI was going to take along a Tesla coil - that should have seen sparks go everywhere.

This month, the branches will meet as follows: the Southern Branch on Wednesday, 1 April at 2000 hours at the Domain Activity Centre; the Northern Branch on Wednesday, 8 April at 1930 hours at the Alanvale campus of TAFE (please listen to VK7WI for exact room numbers and buildings as these may

change); and finally the North-western branch will meet on Tuesday, 14 April at the Penguin High School on Dial Road at 1945 hours. Please come along and support your Branch.

In conclusion, I would like to thank the Divisional Council and Branch officials for their co-operation in compiling this monthly column, from which I am stepping down. Thank you and 73.

Robin L Harwood VK7RH

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Club News

Summerland Amateur Radio Club

At the Annual General Meeting of the ASARC, held on 15 February 1998, the following office-bearers were elected for the ensuing year: President, Ken Hore VK2HE; Vice-President, Andrew Cook VK2KKP; Secretary, Bert Suesskow VK2HIV; Treasurer, Peter Walden VK2LED; Publicity Officer, Graeme Virtue VK2GJ; Committee Members: Alan Foster VK2KEE and Carl Jansen VK2XLT.

A motion to change the name of our Club was discussed, at length, and lost.

It was agreed to present Certificates of Appreciation to all those in the Club with more than twenty-five years membership (about 16 in all).

To encourage budding amateurs, it was decided to grant one year's membership to all who pass the Amateur Radio examinations at the club-rooms, and obtain their Amateur Transmitting Licence.

The Club's Web Site is <http://www.nor.com.au/community/sarc/sarc.html>

Graeme VK2GJ
Publicity Officer

The 50th Urunga Radio Convention

The 50th Urunga Radio Convention will be held at Urunga over the Easter weekend of 11-12 April 1998. Some of the amateurs who have held the position of President/Organiser over the years are Crieff Retallick VK2XO,



VK2ADA, VK2PA (now SK) and VK2DGT at the 1997 Urunga Radio Convention holding trophy cups used in past conventions.

Rod Pike VK2ACU, Ted Gabriel VK4YG, Fred Corruthers VK2PF, Ray Chaplin VK2SB, and Noel Hanson VK2AHH and his assistant Norm Dash.

The equipment used in the early days of the convention was all home spun. Now none of the sophisticated transceivers used to compete are home made, which is more the

pity as it takes the amateur out of amateur radio.

We hope to see as many of the amateurs who have been to Urunga previously at the 50th Convention, and as many as possible who have not been to Urunga before, make the 50th Convention their first.

B J Slarke VK2ZCQ

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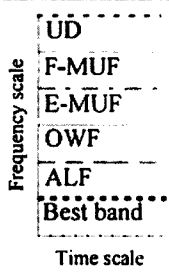
WIA MORSE PRACTICE TRANSMISSIONS

VK2BWI	Nightly at 2000 local on 3550 kHz
VK2RCW	Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm
VK3COD	Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz
VK3RCW	Continuous on 145.650 MHz, 5 wpm, 10 wpm
VK4WIT	Monday at 0930 UTC on 3535 kHz
VK4WCH	Wednesday at 1000 UTC on 3535 kHz
VK4AV	Thursday at 0930 UTC on 3535 kHz
VK4WIS	Sunday at 0930 UTC on 3535 kHz
VK5AWI	Nightly at 2030 local on 3550 kHz
VK5VF	Continuous on 145.650 MHz, 5 wpm to 12 wpm
VK6RCW	Continuous on 147.375 MHz, 3 wpm to 12 wpm
VK6WIA	Monday to Thursday at 2000 local on 3.555 MHz and Tuesday at 2000 local on 146.700 MHz

HF Predictions

Evan Jarman VK3ANI

T Index: 62



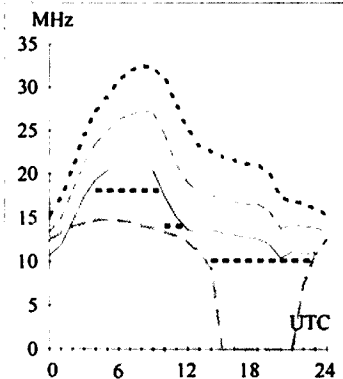
These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication.

The frequencies, identified in the legend, are:-

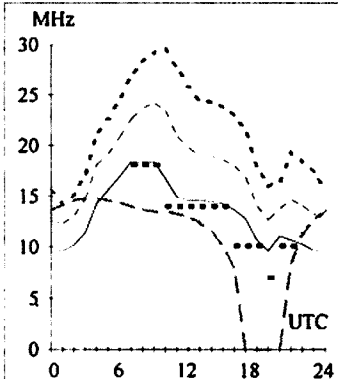
- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

The predictions were made with the Ionospheric Prediction Service program, ASAPS V3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

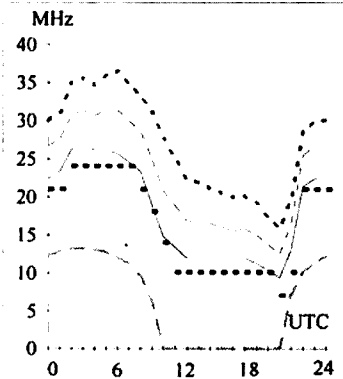
Adelaide-Moscow 318
First F 0-5 Short 13807 km



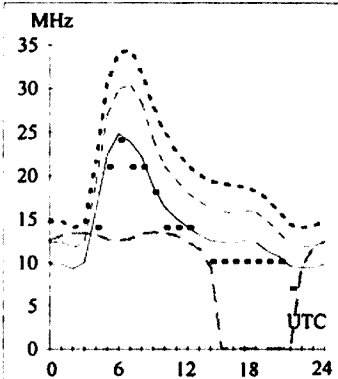
Brisbane-Berlin 321
First F 0-5 Short 15678 km



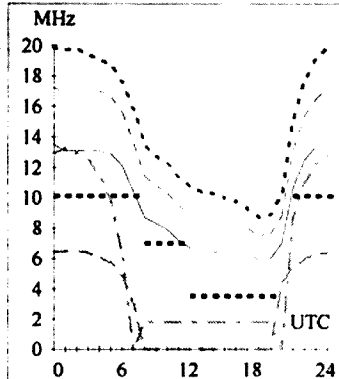
Adelaide-Osaka 357
Second 3F5-9 3E0 Short 7746 km



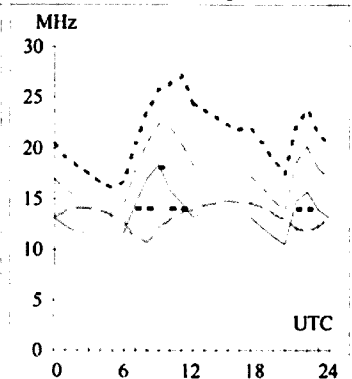
Brisbane-Johannesburg 229
Second 4F3-4 4E0 Short 11633 km



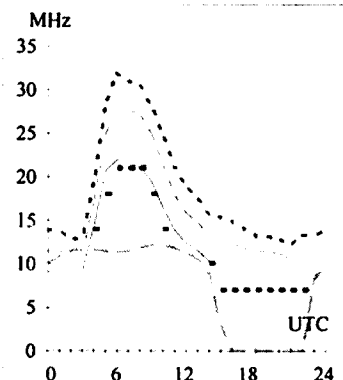
Canberra-Auckland 102
Second 2F20-23 2E6 Short 2300 km



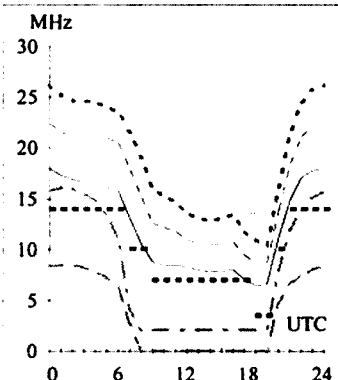
Darwin-London 145
First F 0-5 Long 26170 km



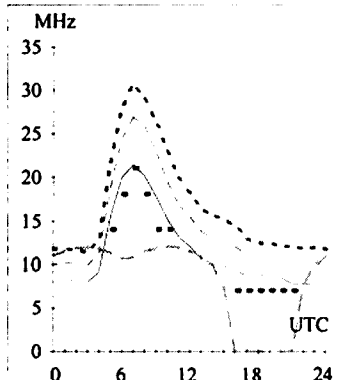
Adelaide-Pretoria 238
Second 4F5-6 4E0 Short 10065 km



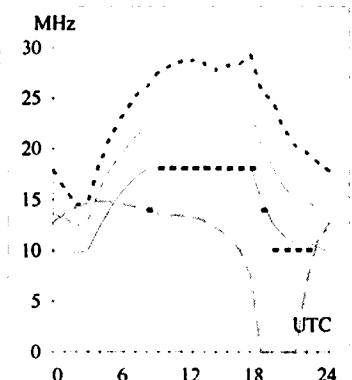
Brisbane-Noumea 70
First 1F15-17 1E3 Short 1471 km



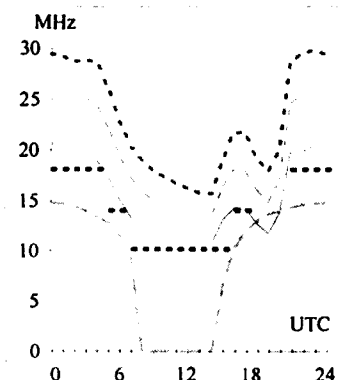
Canberra-Capetown 219
Second 4F4-5 4E0 Short 10778 km



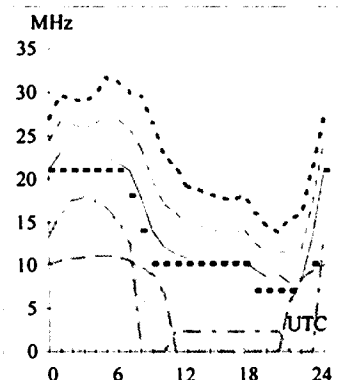
Darwin-London 325
First F 0-5 Short 13854 km



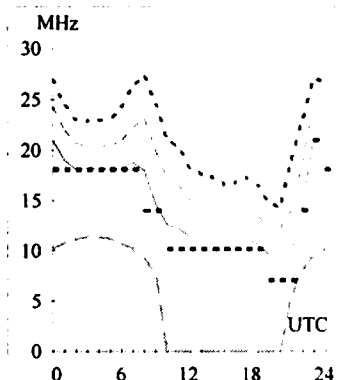
Adelaide-Seattle 51
First F 0-5 Short 13413 km



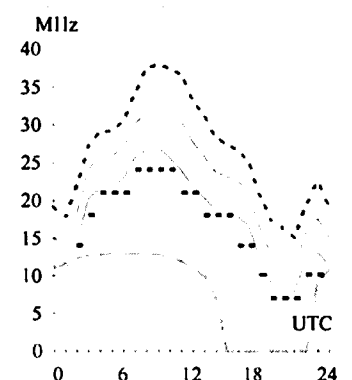
Brisbane-Singapore 293
Second 3F9-13 3E0 Short 6147 km



Canberra-Manila 327
Second 3F8-13 3E0 Short 6286 km



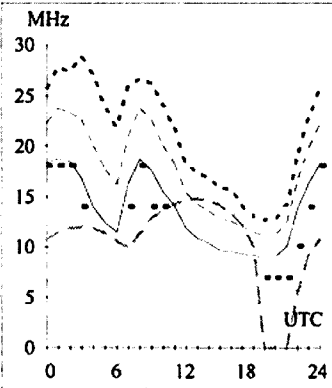
Darwin-Riyadh 295
Second 4F5-11 4E0 Short 10001 km



Hobart-Dakar

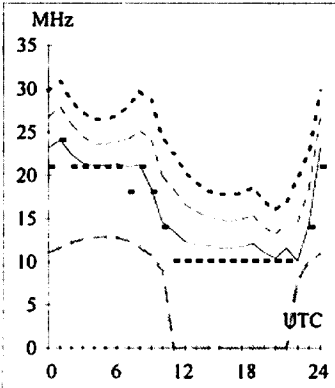
209

First F 0-5 Short 16556 km

**Melbourne-Bangkok**

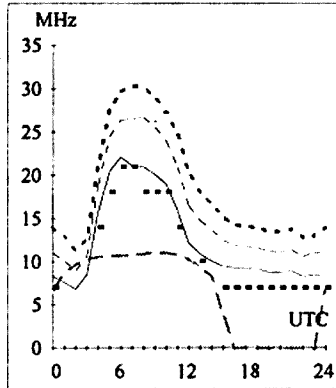
312

Second 3F5-10 3E0 Short 7372 km

**Perth-Harare**

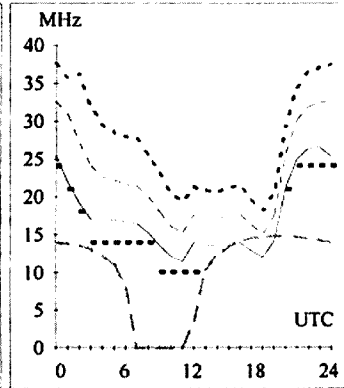
257

Second 4F8-10 4E0 Short 8496 km

**Sydney-Miami**

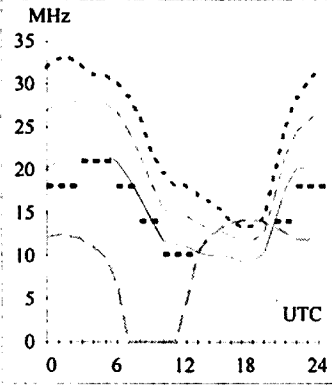
86

First F 0-5 Short 15027 km

**Hobart-Lima**

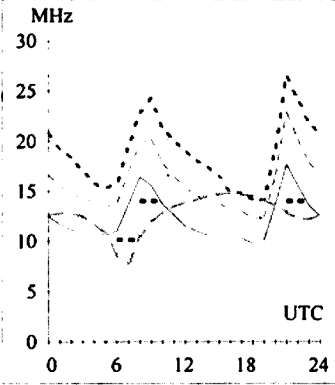
133

First F 0-5 Short 12420 km

**Melbourne-London**

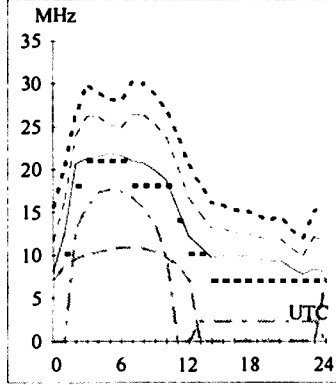
131

First F 0-5 Long 23118 km

**Perth-Maldives**

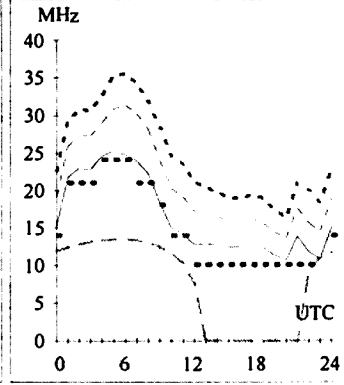
303

Second 3F9-13 3E0 Short 5979 km

**Sydney-New Delhi**

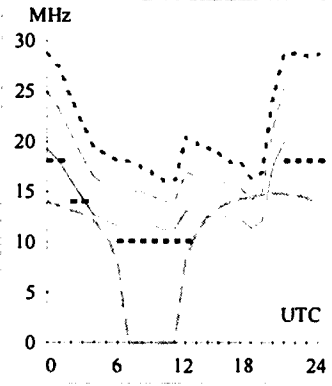
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Second 4F4-9 4E0 Short 10419 km

**Hobart-New York**

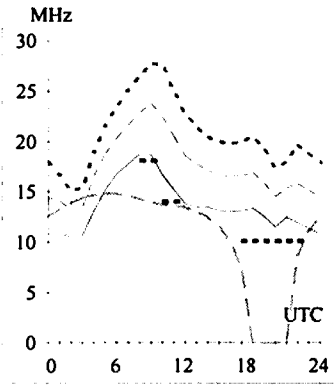
80

First F 0-5 Short 16610 km

**Melbourne-London**

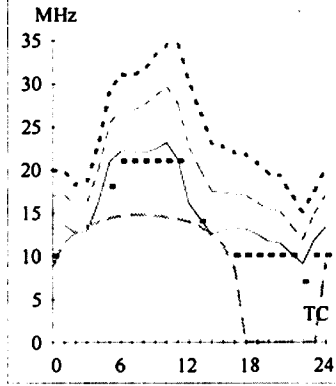
311

First F 0-5 Short 16906 km

**Perth-Rome**

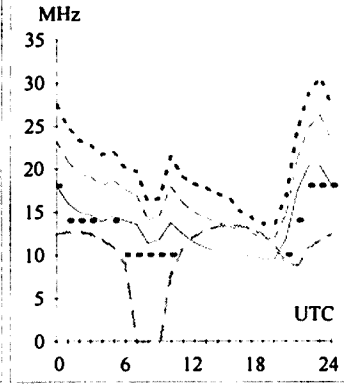
303

First F 0-5 Short 13339 km

**Sydney-Rio de Janeiro**

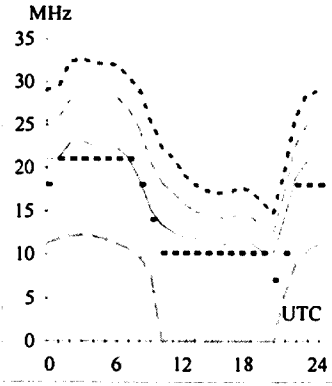
164

First F 0-5 Short 13519 km

**Hobart-Seoul**

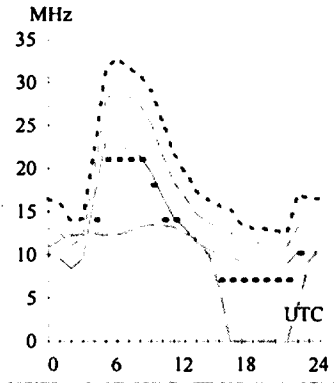
344

Second 4F7-11 4E0 Short 9176 km

**Melbourne-Lusaka**

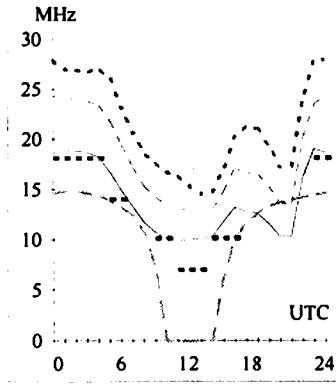
241

Second 4F3-5 3E0 Short 11152 km

**Perth-Vancouver**

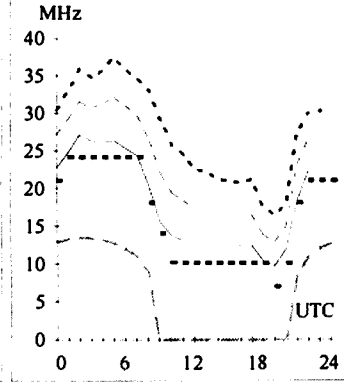
50

First F 0-5 Short 14824 km

**Sydney-Tokyo**

350

Second 3F4-9 3E0 Short 7825 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for **For Sale** and **Wanted** items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194
Fax: (03) 9584 8928
E-mail: vk3br@c031.aone.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX programs for IBM XT/ATs *** "RADFAXZ"** \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** **"SATFAX"** \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** **"MAXISAT"** \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.
- **HAM LOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone"; The Canadian Amateur: "Beyond this reviewer's ability to do it justice, I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02 369 2008 BH, fax 02 369 3069. Internet address rhg@ozemail.com.au.
- **FOR SALE NSW**
 - Yaesu FT-726R 2 m/70 cm satellite txcvr, \$1000. Cushcraft 13B2 antenna, 144 - 148 MHz, 100 feet

9913 coax, \$250. All VGC. Boy VK2DTH, QTHR, 0763153.

• **FM-900s remote heads**, 2 m, tuned and programmed, complete units, choose the programme for north or south of the Hawkesbury River, most repeaters, all packet and main simplex channels, 2 scan groups, \$120 delivered, receipts given. Frank VK2XVJ, 02 4933 3760 4-8 pm ESDST.

• **Icom IC-502 6 m portable SSB txcvr**, recently serviced, manuals, tnic, \$150. Omega antenna noise bridge, original box, GWO, \$50. Valves - commercial, military and consumer, send A4 SASE for list. Brian VK2GCE, QTHR, 02 9545 2650.

• **Yaesu FT-747GX HF txcvr**, with Yaesu MD-1 Desk Microphone, mobile bracket, FM Board, Manuals, in original carton, good radio, good condn, \$800.00 ONO. Aaron VK2ON, QTHR, 024933 5972 AH, 02 4964 6953 BH, 0413 778 234.

• **Kenwood TS-430S HF txcvr**, both manuals, DC power cable, overhauled by Kenwood, \$760. John VK2FUR, 02 4625 1812.

• **Yaesu FT-101 txcvr**, needs alignment, s/n 83C-131697, \$180. P W Campbell VK2AXJ, QTHR, 02 4454 0727.

FOR SALE VIC

• **FT-3000M 70 W 2 m mobile txcvr**, mic, handbook, power cable, EC, \$400. **FT-2400 50 W 2 m mobile txcvr**, mic, handbook, power cable, EC, \$300. J N Cassidy VK3VD, 18 Robertson Cres, Laverton VIC 3028, 03 9369 2042.

• **Southern Cross free-standing 80 ft tower**, with safety ladders, cages, topped with crow's nest, working platform. Bill VK3WK, QTHR, 03 5561 1376.

• **Ameritron AL811 600 W linear amplifier**, s/n AL8113539X, as new, only used once, \$900; reason for sale is it is too heavy for an invalid to handle. Tony VK3ALA, QTHR, 03 5728 6624.

• **Estate Ray Fowler VK3BHL: Universal HC500 antenna coupler**, \$70. **Home-brew frequency**

counter, \$25. **Ham power/SWR meter**, \$25. **Daiwa C165 antenna coupler**, \$25. **Home-brew 20 A regulated PSU**, \$150. **Yaesu FT-101B**, mic, cables, no handbook, \$400. **CB 2 A PSU**, \$25. **Kenwood TR-7800 2 m FM txcvr**, \$250. **Lodestar SWR3d power/SWR meter**, \$25. **Panther 13.8 V 2 A PSU**, \$20. **Kenwood HC10 world clock**, \$50. **Yaesu FF50 DX 52 ohm filter**, \$25. **Microwave Modules 144 MHz bandpass filter**, \$25. **6 position co-ax switch**, \$15. **Antenna changeover switch**, \$5. **Leader signal generator**, \$50. **Home-brew metered PSU**, \$65. **Home-brew metered PSU**, \$45. **Home-brew metered PSU**, \$15. **Model 110 power meter**, \$15. **Qcraft field strength meter**, \$15. **HB power meter**, \$5. **HB power supply dummy load**, \$20. **Micronta multimeter**, \$10. **DSE 1 A, multi-voltage PSU**, \$10. **3 multimeters various makes and condn**, \$20 the lot. **Shure low impedance mic (new)** \$10. **FT7 13.8 V PSU**, \$10. **AM/TM stereo tuner**, \$20. **Kenwood SWR/power meter**, \$50. **Palomar Engineers RF transformer**, \$50. **Low-pass filter**, \$20. **Mura PRX100 mic**, \$25. **Antenna coupler roller inductor**, \$45. **Micronta multimeter**, \$25. **Eddystone GDO in wooden box**, \$75. **Southern Star PSU**, \$5. **2 transistor checkers**, \$10 each. **3AC transceiver**, \$50. **18 ft length 3 inch square oregon**, \$50. **Sharp EL22 multimeter**, \$20. **FT200 PSU**, \$100. **TE50 junior model tube tester**, \$50. **DSE masthead amplifier**, \$5. **Seiki HA23C CB rig**, \$35. **AC line filter**, \$5. **Kenwood TS-820**, appearance OK but not working, handbook, workshop manual, \$100 ONO. Ken VK3AFJ, QTHR, 03 9752 2086.

• **2 MHz HF marine radio**, \$250 ONO; or swap for 3.5 MHz set. **Micronta 7 range volt/ammeter** (long meter), measures up to 300 amps 600 volts, new, still boxed, \$50. J L Tobias VK3MMD, QTHR, 03 5975 2746.

• **Test equipment: Fluke 8600A digital multimeter**, \$130. **Fluke 8810A DMM**, \$140. **HP 606A signal generator**, \$85. **HP 5382A 50 kHz - 65 MHz frequency counter**, \$150. **Racal-Dana 9008M 225 MHz modulation meter**, AM/FM to 1 GHz, \$300. **Marconi TF2300 modulation meter** AM/FM to 1 GHz, \$350. **Telewave 44A wattmeter**, 20 to 1000 MHz, \$130. **Racal 17L communication receiver**, \$400. **Peter VK3IZ, QTHR**, 03 5156 2053, jupiter@net-tech.com.au

• **Icom IC-471H 13.8 VDC all mode 70 cm txcvr**, VGC unmodified, s/n 03154, \$1100. **AG35 masthead pre-amp**, \$200. The pair, \$1200. Des VK3CY, QTHR, 03 5494 3156 anytime.

• **TS-430S**, \$800. **FT-101B**, \$190. **10 MHz CRO**, \$150. **AWA-F242 Dist/Anal**, \$800. **FT-101ZD ext VFO**, \$100. **Marconi Radio Tester MI 2960B system c/w amps, tacs**, MPT 1327 adapter, as new, \$12,500 ONO. **JRC-NJZ900 analogue phone tester**, \$1800 ONO. **Cushcraft A3S HF 3 el tri-band Yagi**, \$500. **Motorola HT antennas 136-151 MHz**, suit HT600, GP200, etc, \$30 each. **Signal Generator/Counter**, 1 Hz res, 50 kHz-80 MHz, \$450 ONO. Lee VK3GK, 03 9544 7368, 015810 101.

• **MFJ1798 80-2 m vertical antenna**, brand new, never used, \$300. **Howard L30951**, 03 9408 7597.

• **KLM KT34 4 el tri-band beam**, only 3 years old, \$500. **Butternut HF6V-X six band vertical antenna**, 5

years old, in excellent condn, \$200. Icom IC-751 HF txcvr, mike, handbook, accessories, good condn, \$750 ONO. Harold VK3AFQ, QTHR, 03 9596 2414 anytime, e-mail hepb@alphalink.com.au.

•Kenwood PSU, s/n 5070229, manual, very little use, excellent condn, \$280. Icom IC-721 HF txcvr, AM/FM/SSB, s/n 01729, can be used with above PSU, good condn, \$750; or both as package, \$950. Fred VK3HFM, QTHR, 03 5360 8284.

•Icom 23 cm linear amplifier, 1 watt in 10 watts out, 12 V supply at 5 A, auto-switching with manual, \$150. Mirage 70 cm pre-amp, auto switching, 20 dB gain, \$100. MFJ989C 3 kW deluxe roller inductor antenna tuner, cross needle SWR/Watt meter, provision for wire antenna, and multiple coaxial antennas, 300 W dummy load, original packaging, manual, \$550. Timewave DSP 9 audio noise reduction filter, 12 V, Random and Tone noise reduction, CW filters down to 100 Hz, complete with original packaging and manual, \$200. Kantronics KPC9612 1200/9600 Packet Modem (V5.2) with original packaging, software and manual, \$350. NALLY galvanised 8 metre tower, lower section 4.3 m 80 mm square tubing, smaller section inside approx 8 m, winch attached to base extends tower to full height, base section mounted against wall with hinge bracket to allow easy erection to a vertical position by one person, mast locks into a second bracket (supplied) on the wall, dismantled and ready for collection in Hartwell, \$200. Chris VK3KCP, 03 9629 2653.

•Yaesu FT-101ZD, matching ext spkr, 600 Hz CW filter, spare 12BY7A driver and 6146B valves, DC power cable, manual, rig works OK, one owner. H V Lonsdale VK3DND, 03 5153 0717.

FOR SALE QLD

•Kenwood TS-520S txcvr, s/n 830738, \$300. DG5 matching digital display, s/n 720321, \$100. \$400 the lot, including four spare 6146s. Has been overhauled recently. Charlie VK4BQ, QTHR, 07 4779 4301.

•Two metre station: Kenwood TR-751A all mode txcvr, 25 W, Mirage B-2516G 160 W amplifier, fully remote controllable, both units in mint condn with all accessories and manuals, \$1200 shipped insured anywhere in VK. John VK4KK, QTHR, 07 3269 6647.

FOR SALE SA

•Icom IC-706 mobile all-mode txcvr, HF + 6 m + 2 m, immaculate condn, in original carton, s/n 01547, \$1500 ONO. John VK5KBE, QTHR, 08 250 7259.

•Drake TR7 txcvr, PS7 PSU, RV7 usual second VFO, RV75 synthesised second VFO, SP75 speech processor, P75 phone patch, MS7 speaker with built-in audio filters for SSB and CW, \$1875. Harro VK5HK, 08 8323 9622, e-mail ayk@terra.net.au.

FOR SALE WA

•Icom IC-R9000 communications receiver, s/n 02674, SP-20 external spkr with audio filters, s/n 005747, as new, original packing, accessories and manuals, seldom used, fabulous opportunity to own this famous receiver, reluctant sale, cost \$8400, will sell for \$4000 ONO. Ron L60326, 0419 934 047

•Kenwood TS-50 HF txcvr, s/n 50301468, as new condn, never used mobile, mobile bracket, manual, \$1000. Yaesu FT-102 HF txcvr, s/n 2J040720, VGC, \$450. John VK6NU, QTHR, 08 9446 1345, 0412 911 230.

FOR SALE TAS

•Yaesu FRG7 receiver, s/n 7H092971, VGC, instruction book, speaker, \$150. A J Cope VK7CAJ, QTHR, 03 6227 9292.

•Kenwood AT-250 auto ATU, mint condn, suit TS-130S, TS-430S, TS-140, TS-680s, 2 m mobile txcvr, 1-10 W, 16 channels xtal locked, good condn, \$150.

MFJ948 Morse keyboard and display, 32 K mem, keyboard near new, \$230. Compakratt serial converter and cartridge software suit C64 and C128, connects to PK232. Allen VK7AN, 03 6327 1171.

WANTED NSW

•Yaesu FL-2100B amplifier, dead or alive, preferably dead. Realistic DX-150A 4 band general coverage receiver. Yaesu world clock. Ampex 100 series, reel-to-reel tape recorder. Ray VK2FW, QTHR, 063 653 410.

•ARB receiver, tuning head, controllers, interconnecting cables and Bowden tuning cable, ie the whole nine yards! Swap, or good money for collector condition. Brian VK2GCE, QTHR, 02 9545 2650.

•Kenwood-Trio DM801 dip meter. Also Bird Wattmeter. Ken VK2KJ, 02 9413 1846, 0412 003 517.

WANTED VIC

•ATU, Emtron 300A or similar, pay top price for clean unit. Max VK3GMM, QTHR, 03 5985 2671.

•Kenwood TS-120V, not working, wanted for spare parts. Len VK3LEN, QTHR, 03 5356 2368.

•AR7 communications receiver. Howard L30951, 03 9408 7597.

•AT-50 ATU for TS-50S, can't afford much on pensioner income, appreciate if can help. Graeme VK3FIR, Margot Street, Ferntree Gully VIC 3156.

Silent Keys

Due to space demands obituaries should be no longer than 200 words.

The WIA regrets to announce the recent passing of:

B L (Bruce) McCubbin VK3SO.

Frederick John Lubach VK4RF

It is with deep regret that we record the passing of another OOT'er, VK4RF. After a long illness, Fred became a silent key on Friday, 13 February at the age of 78.

Fred obtained his licence and joined the WIAQ in 1936. Known as Mr DX, he actively pursued this interest for 62 years, interrupted only by WWII. As a teenager he worked DXCC in almost as many days using a 25 watt home brew rig and wire antenna; a national feat that, for the period, was never surpassed.

VK4RF enlisted in Brisbane in the Naval Reserve on the same day that Robert Menzies announced that Australia was at war. His Morse ability was such that he was immediately posted south to the Naval Training School in Melbourne. At the

•Swap Motorola UHF Syntrix ATT**WBA*G00AK with CTCSS for the equivalent VHF high band type. Ian VK3AYK, 0418 309 050.

•Drop-in charger to suit Yaesu FT-207R, working unit preferred but dead one considered. Don VK3DBB, QTHR, 03 5941 1351 AH only.

WANTED QLD

•Solid state low band two way radio, 50 W. BLY90 transistor. John VK4TL, 07 4096 8328.

WANTED SA

•Icom IC-22S txcvr, not working. Keith VK5OQ, 08 8280 7430.

•Case for D104 microphone, or American Electronics copy. Ivan VK5QV, QTHR, 08 8725 5514.

MISCELLANEOUS

•The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

•If you got your licence before 1973 you are invited to join the Radio Amateurs Old Timers Club. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

completion of that short course he, with three others, radio gear and sufficient supplies to set up a long term camp, set sail to a coastal destination not far south of Cape York. Here they remained throughout the war, radio spying and recording everything they could hear.

Post war Fred joined the ABC/PMG staff as a Broadcast Technician in the Brisbane Stations, later moving to 4QS Dalby and finally to the Frequency Measuring Station at Capalaba, retiring in 1977.

His service to the WIAQ was long and varied. After a period as one of the Institute's Morse instructors, he discharged several duties as a Councillor. He stood twice in the QSL Bureau with well regarded efficiency and provided the weekly WIAQ news broadcasts with up-to-the-minute DX news. As proof of his CW ability he was a long time member of FOC. A quick look at the DXCC Totem Pole shows he was right up the top with the best for many years.

A quietly spoken man of mild temperament, Fred's title of "Mr Efficiency Plus" fitted him well. Not so well known by the younger generation of amateurs, he will be sadly missed by his peers.

Fred Lubach VK4RF is survived by his YF Ethel, daughters Pamela, Lynette and Judith, and son Malcolm.

Alan Shawsmith VK4SS,
a lifetime friend.

ar

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Call Signs	Weekly News Broadcasts	1998 Fees
VK1	ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blemings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2	NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Geoff McGrorey-Clark Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2EO VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$60.00 (G) (S) \$56.00 (X) \$41.00
VK3	Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) Web: http://www.tbsa.com.au/~wiavici/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225(X) and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3VI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4	Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: wiaq@brsbanedialix.com.au Web: http://www.wiaq.powerup.com.au	VK4HD VK4JPH VK4WX	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 28.400 MHz SSB, 29.220 MHz FM, 52.525 MHz FM, 146.700 MHz FM, 147.000 MHz FM, 438.525 MHz (Brisbane only), regional VHF/UHF repeaters at 0900 hrs Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM, regional VHF/UHF repeaters at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5	South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burtford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6	West Australian Division PO Box 10 West Perth WA 6872 Phone 09 351 8873	President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia e-mail address: vk6wia@faroc.com.au	VK6KZ VK6ZLZ VK6OO	146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busseton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7	Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Ron Churcher Secretary Barry Hill Treasurer Mike Jenner	VK7RN VK7BE VK7FB	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart) Repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8	(Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz).			Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times

Note: All times are local. All frequencies MHz.

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YAESU VX-1R MICRO DUALBAND HANDHELD TRANSCEIVER

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VX-1R shown full size

The new VX-1R is one of the world's smallest dualband amateur rigs, sporting a 2m/70cm transceiver with wideband receiver in a case sized just 81 x 47 x 25mm WHD. It has impressive memory and scanning facilities as well as receive coverage of VHF and UHF TV, AM and FM broadcast bands, AM aircraft band and other public service frequencies from 76 to 999 MHz*.

Leading-edge technology from the VX-1R's 500mW MOSFET power amplifiers together with the supplied 3.6V 700mA/H high-capacity Lithium Ion battery will provide many hours of superb local communications. Up to 1W output is available for longer range when external DC power is used. Extensive battery-saving features together with the Li-Ion battery's 2-hour recharge system yields long operating times under real-world conditions.

The VX-1R's extensive memory system provides 291 memory channels, most with Alpha-numeric labelling for easy recognition. A Smart Search™ system allows you to search a portion of a band you define, then loads any active frequencies into 31 special Smart Search™ memories for later inspection (great for finding activity when visiting a new area).

Besides being a fully-featured dual-band amateur transceiver, the VX-1R has extraordinarily wide receiver frequency coverage: you'll also be pleasantly surprised by the great audio on the FM broadcast band. A dual-watch facility is provided - and together with the AM, FM-narrow and FM-wide reception modes - you'll be having fun even when you're not operating on the amateur bands. For selective calling and listening, the VX-1R also includes a CTCSS encoder/decoder and a 104-code Digital Code Squelch (DCS) system as well as a Tone Search facility for both CTCSS and DCS encoded transmissions.

A great range of accessory lines for the VX-1R are available such as speaker/mics, a carry case, as well as a battery holder for 1 x AA alkaline battery which includes an inbuilt voltage step-up converter. Computer programming of the VX-1R is available via the optional ADMS-ID programming kit.

So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

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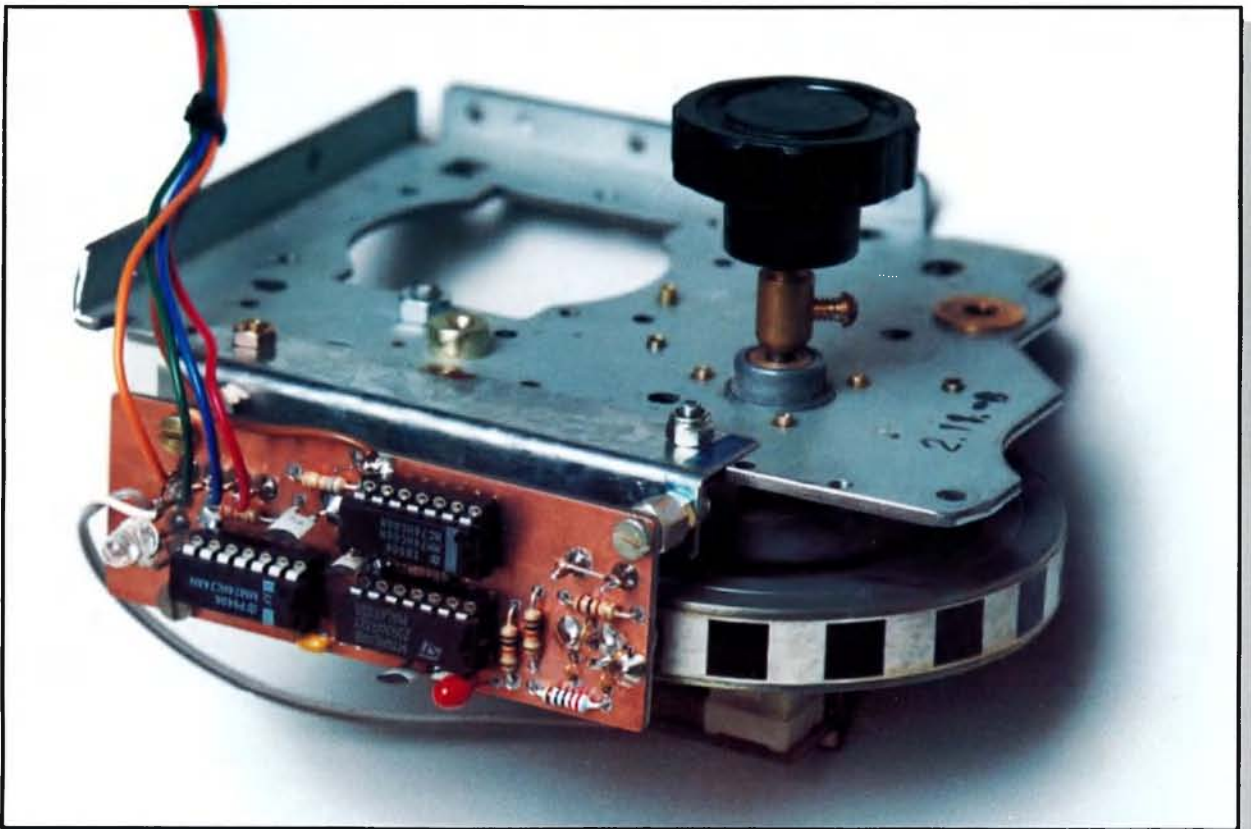
A Amateur R Radio



May 1998

Volume 66 No 5

Journal of the Wireless Institute of Australia



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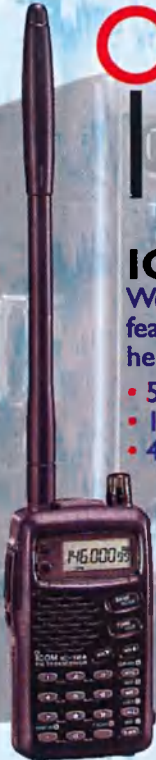
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Cover The shaft encoder for a digital VFO, constructed from the shaft, flywheel and bearing from a defunct VCR. An article by Keith Gooley VK5OQ on how to make this interesting device appears on page 6 of this issue of *Amateur Radio*.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for *Amateur Radio*", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

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Viewpoint

Editor's Comment

A New Era Arrives

Our hobby of amateur radio is always changing, and sometimes a development is taken for granted, quickly becomes the "norm" of the day, and is considered "old hat" a few years later.

Not too long ago packet radio came on the scene with gusto and great promise. Before that we had RTTY, a mode of operation which itself went through a transition from teletype machine to "glass RiTTY" as the devotees described computer based amateur radio teletype.

Who remembers the craze for RTTY pictures? In Melbourne we even had a regular "RTTY Night Owl Theatre" on 2-metres which "screened" RTTY pictures.

This art-form had its foundation among keyboard telegram telegraphists, and was picked up by radio amateurs world-wide.

The use of RTTY on VHF is now virtually non-existent. Its demise has been blamed on packet radio which remains fairly popular. On the HF bands there's still AMTOR and its cousin error correction modes, but these are being challenged by packet.

Amateur television has had its ups and downs. The transmission of pictures by radio amateurs preceded the introduction of TV in Australia in 1956. ATV has gone from black and white, to colour.

Slow Scan TV has also gone colour, and even digital with software based programs, and computer generated facsimile transmissions

Traditionally, amateur radio has been greatly influenced by the availability of disposals equipment. A peak in RTTY popularity flowed from the release of former telex machines.

VHF activity was initially boosted by the availability of superseded mobile radios as used in taxis and the like.

This source of disposals gear began with the bulky all valve units that consumed more watts from the battery than they radiated up the stick. Then came hybrid transceivers with valves only in the finals, and followed soon after by fully solid state units.

A new era in this type of disposals equipment has arrived on the local scene with a real thump. We have available fully synthesised and scanning transceivers suitable for conversion to amateur frequencies.

Currently the Philips FM92 series of mobile radio, ideal for EPROM conversion to amateur frequencies, has become available in most states at really affordable prices. They can even be programmed for CTCSS encoding.

A new era has truly been born in our hobby. One wonders what the future will hold.

Jim Linton VK3PC

Guest Editor

ar

WIA News

David Thompson VK2NH
Federal Media Liaison Officer

Many Changes at Federal AGM

The 61st annual Federal Convention took place in Melbourne over the week-end of 28/29 March. To reduce costs, it has been decided not to hold any more quarterly Special General Meetings, so the Convention, as in earlier years, is also the Annual General Meeting.

Twenty five delegates and office-bearers took part in the discussions, while a former manager of the Federal Office, Donna Reilly, appointed as Minute Secretary, recorded all proceedings in shorthand.

Initial debate centred over procedural matters, but then moved on to the suspension of the Editor, which had been implemented for three months from mid-February (the suspension was in response to the publication in February of letters thought inappropriate). A majority of Councillors thought the suspension inappropriate and it was rescinded. Other topics discussed included the production of the 1998 Call Book and possible measures to improve the Institute's financial position.

After considerable discussion on the aims and objectives of the WIA and how best to achieve them, it was time to hold

the ballot for the office-bearers. Initially there were three candidates for President and five for directors (three being required).

Peter Naish VK2BPN was elected President, so ceased to be an Executive candidate, as the President is automatically Chairman of the Board.

Roger Harrison VK2ZRH then withdrew his nomination, so the remaining three candidates were elected Directors, namely Martin Luther VK5GN, Wally Howse VK6KZ and Neil Penfold VK6NE, the first two being new faces on the Board.

A number of changes also occurred in the various co-ordinator positions. David Wardlaw VK3ADW retired as IARU Liaison Officer, and is to be replaced by Grant Willis VK5ZWI. David continues as ITU Conference leader.

Wally Watkins VK4DO resigned from the Radio Sport and ARDF positions. Roger Harrison VK2ZRH resigned from several positions, namely EMC/Standards, International Beacon, and Media Liaison. We will miss you from *WIA News*, Roger! He also resigned from the ACA Liaison team and was replaced

by Brenda Edmonds VK3KT. Peter Nesbit VK3APN retired as Contests Co-ordinator and was replaced by Ian Godsil VK3DID.

This year it was Australia's turn to be host to observers from the NZART, which was ably represented by Alan Wallace ZLIAMW (the President) and Murray Woodfield ZLICN.

Overall, the Convention was more successful than had been initially feared. The significant differences between delegates on a number of topics were smoothed over in a spirit of amicable compromise. It is to be hoped that this continues.

A more detailed account of the Convention results may be issued later when the official minutes are published and some incomplete items dealt with.

The Federal Convention, being the annual general meeting of WIA Federal, is required to handle statutory matters according to Corporations Law. Due to the unavailability of an auditor's report, the Federal Convention delegates voted to adjourn the AGM to a date to be fixed.

It is anticipated that the AGM will be resumed and finalised as soon as practicable, enabling the new board to assume its management role.

Bill Rice VK3ABP

Federal President on the Internet

Newly elected WIA Federal President Peter Naish VK2BPN has assured the amateur community that it will have better value for money under his leadership.

He has made the comments in an address recorded shortly after he was elected Federal President. This recording gave him an opportunity to talk about his aspirations, feelings upon being elected and his sense of duty.

Peter who celebrates 50 years this year as a radio amateur, said he was honoured to have been elected Federal President of the WIA, the oldest amateur radio society in the world. The WIA has been in business since 1910. He also said, "We need to concentrate on our core activities, working closely with national and international organisations to maintain our existing privileges and hopefully to extend them."

Peter concluded, "We will work to achieve a cohesive team, working together to provide members of the WIA a better environment in which to pursue their hobby. We will concentrate our efforts on reducing costs and improving output".

He was speaking to WIAQ's Graham Kemp. You can retrieve the five minute talk by visiting the ftp site of the Queensland Division of the WIA. It is in Real Audio file format and of course is excellent quality. The address is <ftp:wiaq.powerup.com.au>

Proposed Regulatory Framework on RF Exposure in Australia

Here in Australia late last year, the Australian Communications Authority (ACA) moved in response to community concerns about possible adverse health effects from radiofrequency devices by proposing to mandate a standard, designed to limit human exposure to the electromagnetic radiation emitted by radio and telecommunications transmitters.

Changes to the Radiocommunications Act on 1 July 1997 enable the ACA to use new powers to mandate health and safety standards.

The proposed approach supports, and is consistent with, the current body of international scientific opinion that radiofrequency devices which operate in accordance with recognised human

exposure safety standards, will not pose a health risk.

The mandatory standard proposed by the ACA will be based on the Australian Standard AS2772.1 (*Radiofrequency Radiation: Maximum Exposure Levels - 3 kHz to 300 GHz*).

The standard determines limits for the Specific Absorption Rate (SAR), which is a measure of electromagnetic energy absorbed by biological tissue. These limits are amongst the most stringent in the world and have large safety factors built in to assure protection against possible health effects.

The ACA has consulted with the community, as well as industry, to produce a paper which discusses the compliance framework and its implementation. The paper is titled,

Radiofrequency Electromagnetic Energy: Proposal for Mandatory Human Exposure Standards and Compliance Framework.

Compliance with this standard will be required for devices such as cordless and mobile phones, handheld or portable amateur and CB equipment and remote control units.

Owners and operators of radiocommunications facilities will also be required to demonstrate compliance with the mandatory standard prior to issue or renewal of a radiocommunications licence. This requirement will be written into their licence.

At the time of writing further details of the implementation timetable of the regulatory standards were not known but will be advised in further issues of *WIA News*.

HELP WANTED

The WIA Federal Office is looking for a volunteer with Accounting experience to act in the capacity of Federal Secretary/Treasurer responsible to the directors.

This position would require spending a maximum of one day per month in the Federal Office at Caulfield Victoria for the purpose of looking over the prepared monthly accounts and attending to any statutory secretarial duties.

For further details please contact June Fox on: 03 9528 5962.

Written applications should be addressed to:

PO Box 2175
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Visiting the Land of the Long White Cloud?

Did you know that when visiting New Zealand, you can operate under NZART Reciprocal Licensing arrangements? More information can be obtained from the NZART Reciprocal Licensing Bureau, Russ Garlick ZL3AAA, 18 Harbour Road, Motueka 7161, New Zealand.

Any overseas licensed amateur visiting New Zealand can operate for up to a maximum of four weeks on 144 MHz and above. No application need be made and no fee is charged.

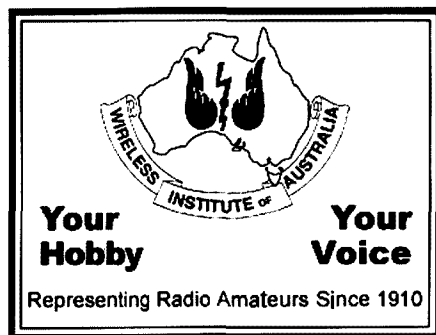
They operate using their home call-sign suffixed by ZL1, ZL2, ZL3 or ZL4, as appropriate to the area that they are visiting at the time.

They should be able, if necessary, to satisfy the Ministry of Commerce that they hold a current licence and/or certificate equivalent to the New Zealand Limited or General qualification, valid for the term of their visit. A copy of their current licence and/or certificate must be carried while in New Zealand. Usage meets the requirements of the New Zealand Radio Regulations 1987 and conforms to the terms, conditions, and

restrictions applying to amateur apparatus operating in New Zealand.

A Permit may be obtained from the Ministry of Commerce for HF operation. Application forms and information are available from the Bureau as above; however, this has a two month lead time.

Visitors are advised to obtain a copy of the NZART Callbook, which contains amateur frequencies, band plans, repeater locations, branch information, and much other information. The Callbook will be of assistance to amateur radio visitors travelling in New Zealand and can be purchased from: The General Secretary, NZART, PO Box 40-525, Upper Hutt, New Zealand.



Clocking Up Good Service

Volunteer service within an organisation is always limited to a few who constantly put up their hands to do a job. Well known amateur, *Amateur Radio* columnist and WICEN member Gil Sones VK3AUI is one of these people.

He has achieved a true milestone by attending and being part of the support for 20 Murray Canoe Marathons. His first marathon was in 1972 and while he missed a few along the way, he clocked up 20 in 1997. This is a brilliant effort as I am sure you will realise when you consider that the marathon is run for five days straight between Christmas and the New Year.

Gil will receive due recognition from the Red Cross shortly in the form of a certificate. The certificates are awarded to all volunteers on the marathon for four years participation. This equates to 1,000 miles covered. Yes, you guessed it; Gil's certificate is for 5,000 miles.

If you are wondering why miles and not kilometres, the certificates were introduced when miles were the measurement of land distance here in Australia and it has remained that way until this day. Congratulations Gil on a job well done, proving that volunteer work does on occasions have its reward. I'm sure all who have known you and your effort through the years applaud this recognition.

Function Was Not a 'Belly Flop'

WIAQ News reports that after an embargo of several months the somewhat rounded details of a Sunshine Coast group social could be reported.

Apparently at the social arranged by June VK4SJ, at a Caloundra Greek restaurant, several of that club's 'elder statesmen' took to the floor with a genuine belly dancer.

Dickie Poo VK4BBA later claimed she was worth at least seven camels. There is no truth in the rumour that belly dancing has taken over from the foxhunt as one of the club's activities. But, it is believed that everyone has been watching their calorie intake ever since.

(Item, without extra comments, courtesy of Qnews.)

APOLOGY - MR DEANE LAWS

In the edition of the "Amateur Radio Journal of the Wireless Institute of Australia" published in May 1996 at pages 23 to 25 we published certain statements about an amateur radio operator which may have been understood by a number of readers to have referred to Mr Deane Laws and which were either wholly untrue or inaccurate.

In the article, under the heading "Threats", it was said that threats were made against the author's wife and children and inferred that they were made by the amateur radio operator referred to in the article under the heading "Complaints". These threats, whilst made, were not made by Mr Laws and any inference that they were is regretted.

The article was based on a talk given by Mr Hopper to amateur radio operators at Deloraine, Tasmania in March 1995. We unreservedly apologise to Mr Laws for the distress caused to him and his family by those untrue and inaccurate statements.



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Technical

A Shaft Encoder for a Digital VFO

Keith Gooley VK5OQ
"Torr-Crest"
Tenafeate Court
One Tree Hill SA 5114
e-mail: keith@senet.com.au

It is quite possible these days for the home experimenter to construct a digital VFO using one of the new direct digital synthesiser ICs that are available. The excellent ARRL experimenters magazine, *QEX* described such a VFO (Ref 1). *Electronics Australia* also described a DDS oscillator designed by Tibor Bryce (Ref 2). This device was made available as a kit controlled from the printer port of a PC.

This article describes a device which I am using to provide control over an oscillator frequency like the tuning knob on a receiver or signal generator. Rotate the knob clockwise and the frequency increases, anti-clockwise to decrease. The

QEX design used a commercial shaft encoder but I wanted to roll my own. I came across an excellent shaft, flywheel and bearing while dismantling a defunct VCR for parts. It was the main capstan and has a beautiful feel, ideal for a tuning control.

Around the periphery of the flywheel, a strip of paper was glued having alternate black and white squares, 16 of each. These were drawn up on a PC graphics package and with a bit of trial and error the total length was made equal to the circumference of the flywheel. A pair of reflective opto couplers sense the difference between the black and white, and the resulting signals are processed by a simple digital circuit as seen in Fig 1.

There are two basic outputs; one giving a six microsecond pulse for each black to white and white to black transition, and the other indicates direction, high for clockwise rotation and low for anti-clockwise. I adapted the circuit from the shaft encoder of the Racal RA3701 commercial communications receiver.

Some axial movement (in and out) of the tuning shaft was allowed so that when the tuning knob is pressed a switch operates and coarse tuning is activated. Pressing the knob again opens the switch, returning the tuning rate to normal.

Circuit Description

The LEDs in the opto-couplers are in series with a current limiting resistor and a switch. The latter provides a dial lock facility to hold the frequency at the current displayed value. The waveforms at the collectors of the photo-transistors are roughly sinusoidal as the shaft is turned and the dark to light (or vice versa) transition passes across the coupler.

The waveform is squared up by the two Schmitt trigger devices, IC1A and B. The exclusive OR gate IC2A produces a logic high if its inputs are at different logic levels and a logic low if they are

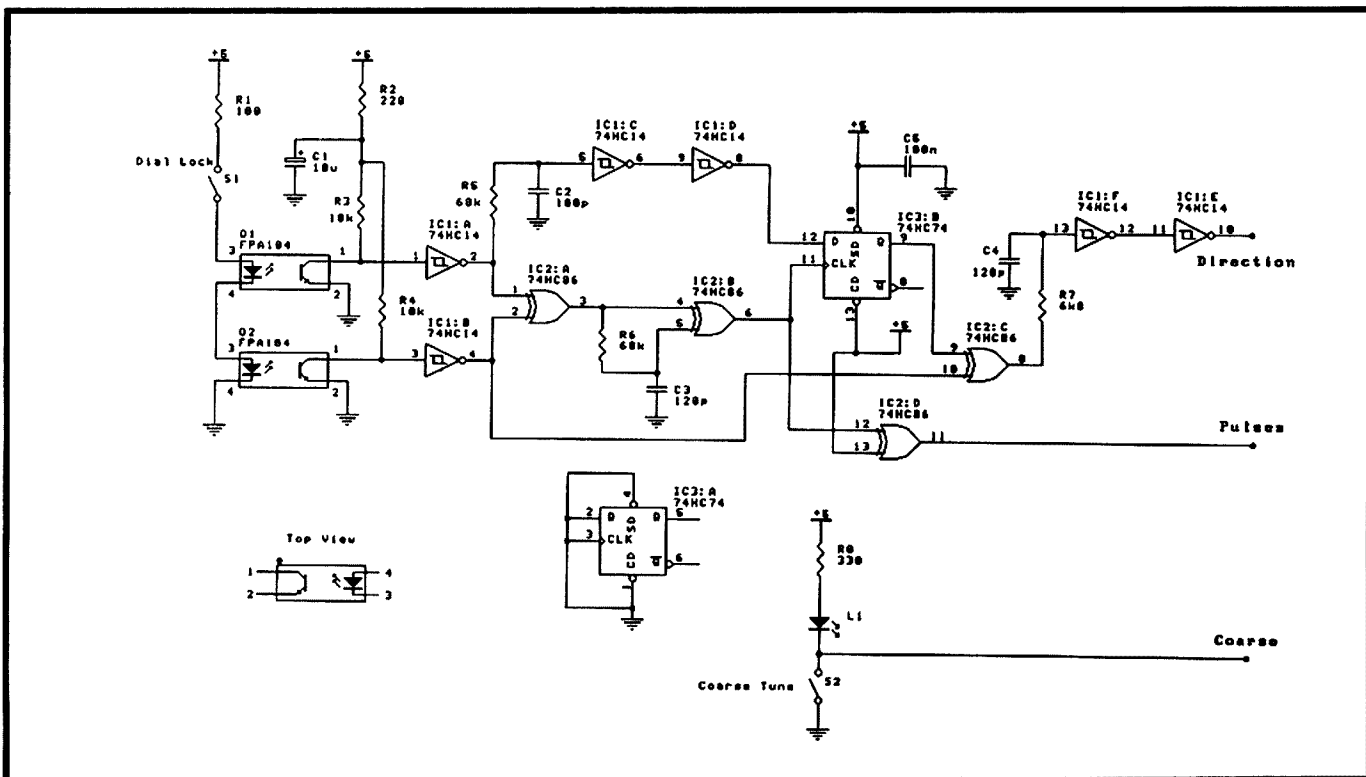


Fig 1 - Schematic of the shaft encoder for a digital VFO. (Drawn by Keith Gooley VK5OQ)

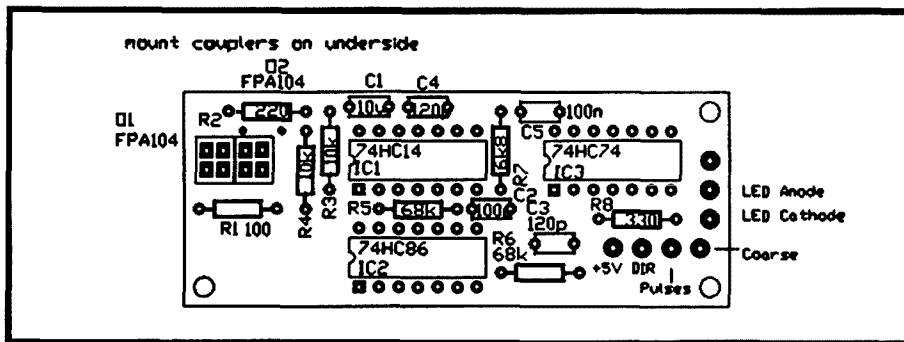


Fig 2 - Circuit board layout, shown actual size. (Drawn by Keith Gooley VK5OQ)

the same. Hence, if a transition of either polarity has passed one opto-coupler but not the other, the IC2A output is high and conversely if both couplers face the same square, the IC2A output is low.

Most of the time the two inputs to IC2B are the same and so its output pin 6 is low but, for a brief time after each transition of both polarities, pin 5 input remains in the opposite state to pin 4 due to the time constant of R6, C3 - about eight microseconds. During this period the output of IC2B goes high, generating a narrow clock pulse for the D-type flip-flop.

Meanwhile, the output of one of the opto-couplers is delayed by R5, C2 about seven microseconds before becoming the data input of the flip-flop. This logic level is transferred to the Q output on the positive transition of the clock. If this output is in phase with the output of the other opto-coupler, the output of IC2C is low and vice versa. This is the direction of rotation signal indicating whether a given transition occurred first on one opto-coupler output or the other. The signal is filtered by R7, C4 to remove any glitches and buffered by IC1F and IC1E.

The flip-flop clock pulses are inverted by IC2D to become negative going, one pulse for each transition of black to white or white to black.

The coarse tune switch is S2 and, when closed, places a logic low on the coarse tune output. LED L1 is also turned on to indicate that coarse tuning is active.

Construction

The layout of components on the circuit board is shown in Fig 2. The board is a piece of single sided copper laminate with the components mounted on the copper side and wiring on the underside.

The two opto-couplers are mounted on the underside and the board is fixed so that they are in close proximity to the periphery of the flywheel. I used the layout of Fig 2 as a template for drilling the board and, then all holes which don't provide earth connections are slightly countersunk to avoid shorts to the ground plane.

I find this an excellent method of construction as the board can be laid out using a CAD program (Protel) and the layout optimised before construction is commenced. The low impedance ground plane promotes stability in RF circuits. If an etched PCB is warranted, double sided laminate is used and the underside only is etched. The ground plane side is protected from etchant by putting a Contact® adhesive sheet over it.

The photographs of the unit show the coarse tune switch on the rear end of the shaft. The switch is a DPDT push-on push-off type and is mounted on a bracket

fabricated from pieces of copper laminate soldered together. The two poles of the switch are wired in parallel but of course there is no reason why a SPST switch cannot be used.

The flywheel and shaft are pushed towards the front panel by a length of flat spring rescued from a used set of ignition points. The end of the spring presses on a hardened ball at the centre of the flywheel resulting in only a small increase in friction and the shaft rotation is smooth and free, ideal for VFO tuning.

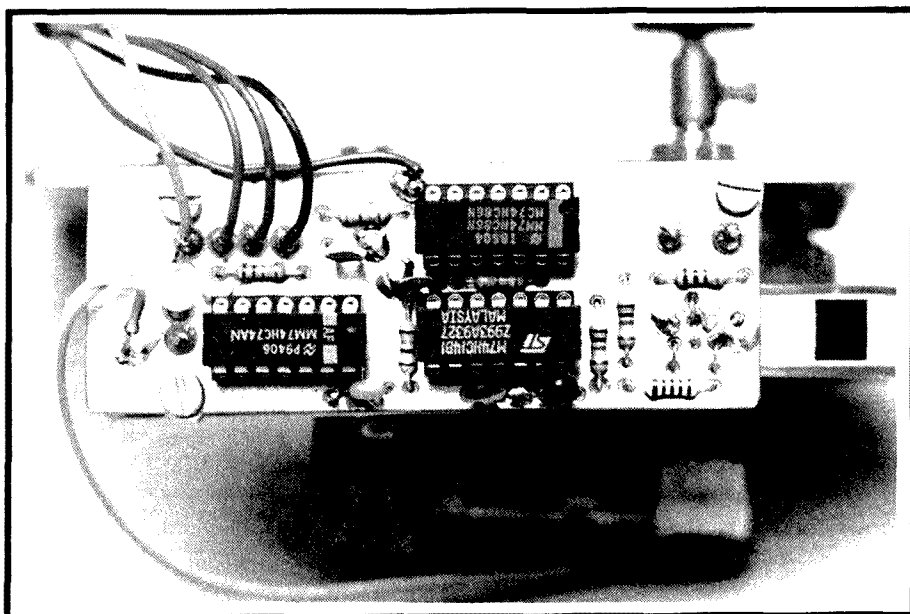
Components

Procurement of a suitable shaft and bearing is left to the individual constructor but there seem to be plenty of defunct VCRs around. The opto-couplers are available from: Vorlac Industries, 261 Huntingdale Road, Huntingdale VIC (PO Box 142, Huntingdale VIC 3166), phone (03) 9548 9229, fax (03) 9562 8772. The catalogue number is Z21056 and they are \$1.50 ea.

The remaining components are readily available from any of the major electronics retailers.

References

1. Preuss C W. *WB2V - Building a Direct Digital Synthesis VFO - QEX July 1997.*
2. Rowe JVK2ZLO - *A PC Controlled Sweep Analyser - Electronics Australia September and October 1995.* ar



Close-up of the shaft encoder circuit board.

■ Test Equipment

Audio Oscillator and Function Generator

Paul Clutter VK2SPC
52 Keats Avenue
Bateau Bay NSW 2261

There are many audio oscillator and function generator circuits around but few include a saw-tooth with square and

sine waves. As the circuit diagram shows, this design includes two separate generators.

Wien Bridge

The first is a Wien bridge with a 741 op-amp for the sine wave, which is an old standby from the ARRL Handbook.

The only change in the 741 op-amp circuit is a substitute for the 327 type globe connected between pin 2 and earth. The 327 is a 48 V 40 mA rated lamp but, as I did not know where to get one, I substituted two Grain-O-Wheats of 12 V 50 mA each in series - near enough to the 327. This globe is available from Dick Smith Electronics, Cat No P-8140.

This is an amplitude control device and some circuits use thermistors which ensure reasonably constant amplitude

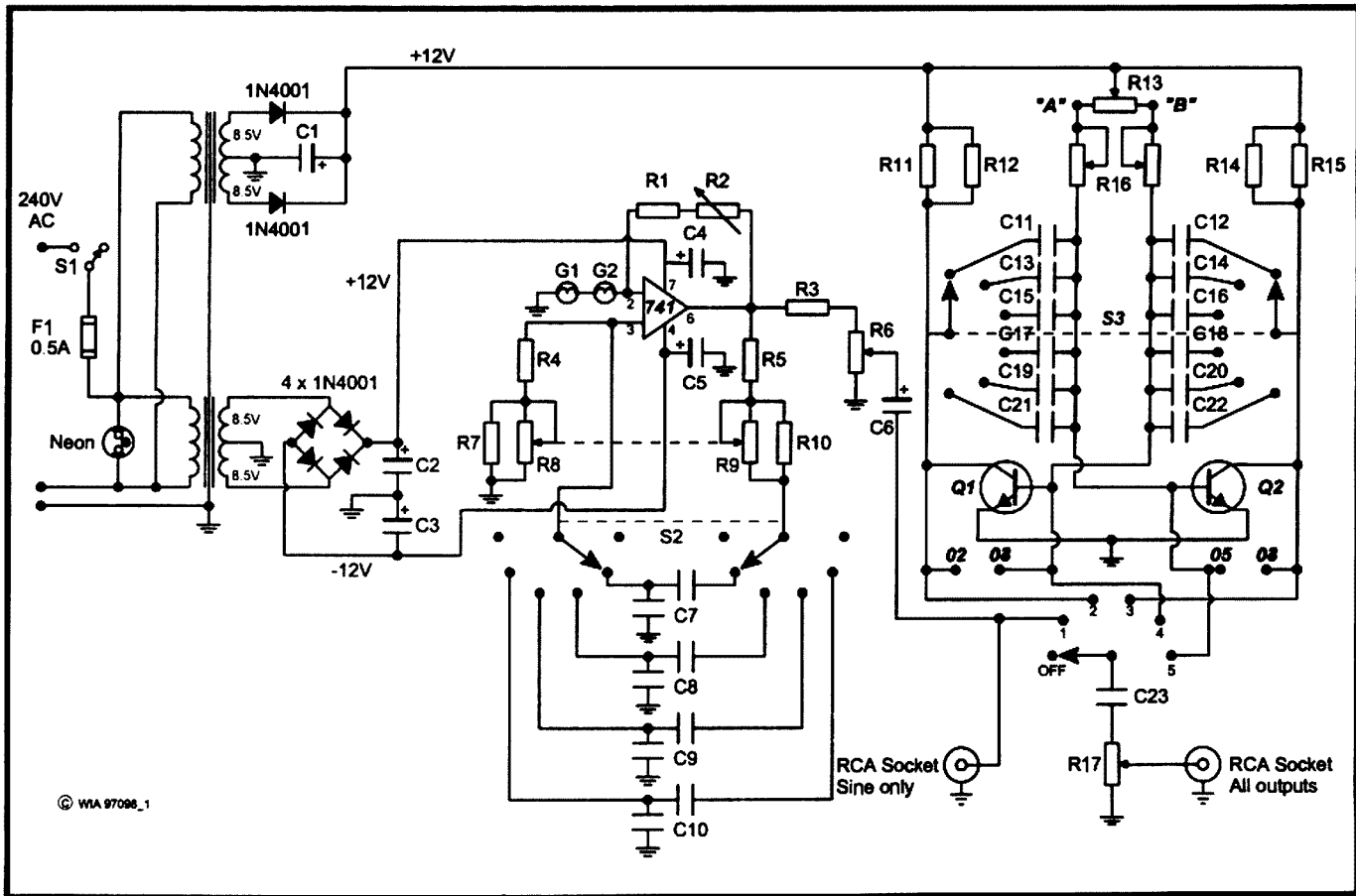


Fig 1 - Schematic of the audio generator.

Components List:

- C1 2200 μ F 16 V
- C2, 3 1000 μ F 16 V
- C4, 5, 6 10 μ F 16 V
- C7 2 x 470 nF 50/100 V
- C8 2 x 100 nF 50/100 V
- C9 2 x 10 nF 50/100 V
- C10 2 x 1.0 nF 50/100 V
- C11, 12 1 μ F 35 V Tantalum
- C13, 14 470 nF 50/100 V
- C15, 16 147 nF (100 + 47 nF 50/100V)

- C17, 18 47 nF 50/100 V
- C19, 20 15 nF 50/100 V
- C21, 22 3.52 nF (3.3 nF + 220 pF 50/100 V)
- C23 1 μ F 50/100 V
- R1 100 ohm $\frac{1}{2}$ W 5%
- R2 220 ohm Trimpot
- R3 220 ohm $\frac{1}{2}$ W 5%
- R4, 5 2.2 k $\frac{1}{2}$ W 5%
- R6 10 k linear pot
- R7, 10 27 k $\frac{1}{2}$ W 5%
- R8, 9 100 k linear dual pot

- R11, 15 220 ohm 1 W 5%
- R12, 14 560 ohm $\frac{1}{2}$ W 5%
- R13 10 k linear pot
- R16 50 k linear dual pot
- R17 10 k linear pot
- S2, 3 2 x 6 position switch
- G1, 2 12 V 50 mA "Grain-O-Wheat" globes (DSE Cat No P-8140)
- Q1, 2 BC337 (or any suitable NPN transistor at least 500 mW and 1 MHz frequency)

with changes of supply voltage and ambient temperature. There is some momentary instability of output when changing frequency due to the thermal time constant of the globe or thermistor. Stable output is regained within one to two seconds.

R2 adjusts feedback, but allow five to 10 minutes warm up before adjusting to 5% below clipping. Check all ranges as the higher frequencies tend to clip more than the low.

Position No 1 on the function switch gives all the sine wave frequencies at the RCA socket "All outputs" (see Fig 1). A separate optional output RCA socket "Sine only" is also connected to position No 1 if both sine wave and square/ramp (saw-tooth) waves are wanted on a double beam oscilloscope.

A Stable Free Running Multi-vibrator

The square and ramp (saw-tooth) waves are generated from the astable free running multi-vibrator with an extra component R13 (10 k potentiometer) which adds pulse width and ramp shape control.

I am aware of the various IC chips and other circuits but the multi-vibrator was my choice as the saw-tooth was needed for sweep experiments and new ideas on RF tuning.

The basic operation of the multi-vibrator is well described in many textbooks, so I will bypass that and move on to the extra controls.

With the 10 k pot (R13) at the centre position, the square waves at Q1 and Q2 collectors and the ramp waves at the bases are symmetrical as both have equal R and C and voltages. When shifting between "A" and "B" of the 10 k pot (R13), the width of the pulse can be changed and, together with the frequency and amplitude controls, a variety of timing and shapes are possible. Likewise, the duration and amplitude of the ramp shape can be changed (see 'scope diagrams).

As the measured frequencies are different from those calculated by the formula, due to variation in capacitor tolerances (usually 10%) and resistors (5%), anyone who constructs this oscillator as per the circuit diagram will likely find some difference in the measured frequencies.

Operation

As the measured frequencies are different from those calculated by the formula, due to variation in capacitor tolerances (usually 10%) and resistors (5%), anyone who constructs this oscillator as per the circuit diagram will likely find some difference in the measured frequencies.

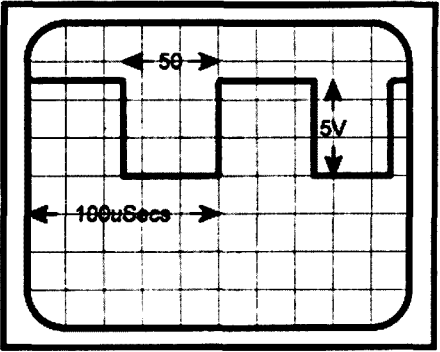


Fig 2 - Q1 Q2 collectors, 10 k pot (R13) centre, function switch at positions 2 and 3.

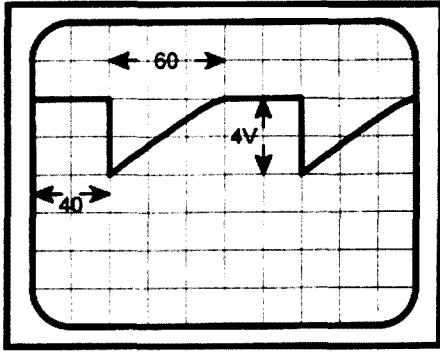


Fig 5 - Q1 base, R13 at "A", function switch at 4. Q2 base, R13 at "B", function switch at 5.

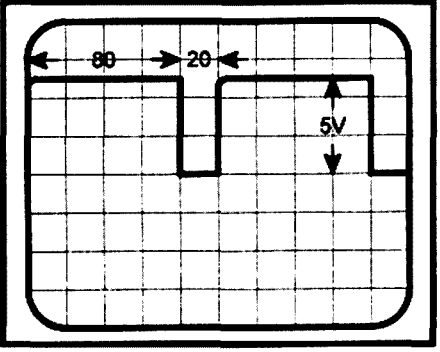


Fig 3 - Q1 collector, R13 at "A", function switch at 2. Q2 collector, R13 at "B", function switch at 3.

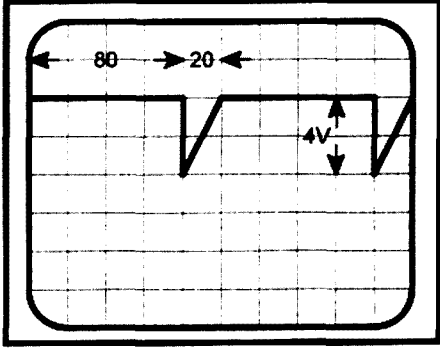


Fig 7 - Q1 base, R13 at "B", function switch at 4. Q2 base, R13 at "A", function switch at 5.

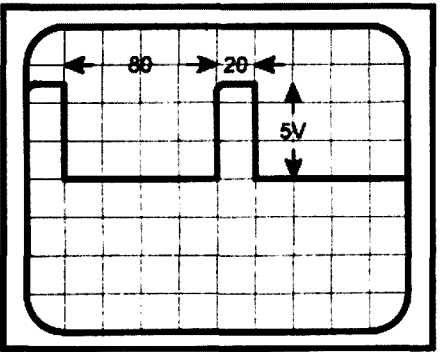


Fig 4 - Q2 collector, R13 at "A", function switch at 3. Q1 collector, R13 at "B", function switch at 2.

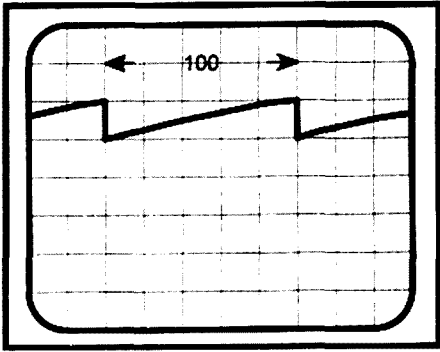


Fig 8 - Vertical reduced to 2 V. Q1 base, R13 at "A", function switch at 4. Q2 base, R13 at "B", function switch at 5.

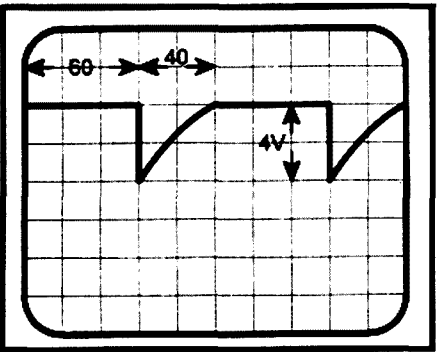


Fig 5 - Q1, Q2 bases, R13 centre, function switch at positions 4 and 5.

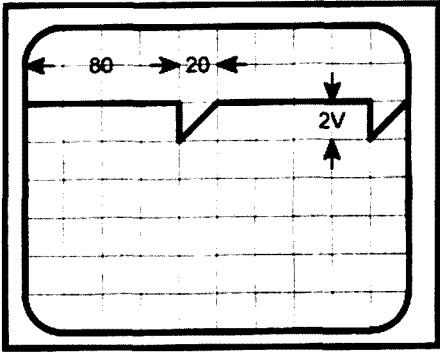


Fig 9 - Vertical reduced to 2 V. Q1 base, R13 at "B", function switch at 4. Q2 base, R13 at "A", function switch at 5.

However, there should not be any gaps between the switching positions of minimum and maximum frequencies.

The range of the 741 sine generator is from about 15 Hz low to 50 kHz high in four steps. The range of the multi-vibrator is about 40 Hz low to 45 kHz high in six steps. The measurements were taken by the time base frequencies of the oscilloscope.

Referring to the eight scope diagrams, the time base was set at 20 micro-seconds per division which equals 100 micro-seconds for one Hz, equal to a 10 kHz frequency of the multi-vibrator. This was just a random frequency to give an idea of the waveforms possible.

The two transformers in the power supply were junk box items which supplied the two different modes, the dual voltage for the 741 op-amp and the single voltage for the multi-vibrator.

O2, O3, O4 and O5 on the circuit diagram are terminals for oscilloscope connections, coming directly from the multi-outputs which correspond to those numbers on the function switch, thereby leaving the RCA "All outputs" socket free for other uses. ar

History

Those Were the Days!

John Scougall VK5YY
46 Piccadilly Road
Crafers SA 5152

Listening to the words of this popular song one day, I was carried back to the halcyon days of amateur radio around 1964, long before mobile phones and Internet saw the light of day. This was when \$US200 would buy the Heathkit linear amplifier which boasted 1200 watts PEP - globe circling SSB power at tremendous savings and extra years of dependable, trouble free performance. I still have one.

A Hallicrafters three band SSB transceiver with RIT (Receiver Incremental Tuning) and AALC (Amplified Automatic Level Control), the SR160 would set you back \$349.50 with an additional \$99.50 for the AC power supply/speaker.

By January 1968, we saw the Hurricane SR2000 transceiver, also from Hallicrafters, which was a transmitter, receiver and linear amplifier all rolled

into one (this sold for \$995 in the USA with the PSU at \$395), and its more modest companion the Cyclone 3 which was more suitable for Australian requirements. This model covered all the amateur bands of the day and featured a notch filter, RIT, PTT and VOX. It was equipped with a pair of 6KD6s which worked hard enough to need an in-built fan.

Although the state-of-the-art transceivers of today are worlds apart from the old warriors of the 60s, I find I have no need to apologise on the odd occasion that I put them on the air. Once they have gone through the warm up stage they are relatively stable and the audio quality is on a par with the duck-talkers we hear on the band now. At least no one has called me to task for unreadable signals. ar

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John VK5YY with the SR400A (Cyclone 3) on the right, and next to it the SR160.

■ Mobile

50 Years of Mobile Radio Operation

Les Brennan VK4XJ
12 Cornhill Street
Kenmore QLD 4069

This article is not intended to be an instructional article on the installation of mobile equipment, but the ideas expressed may be of help to others interested in the subject.

Mobile and portable operation has held a special interest for me since obtaining my present call VK4XJ more than half a century ago. This interest was fostered, no doubt, by service with Signals in New Guinea during World War II.

Early Post War Years

We had no mains power connected to our home when I returned after WWII. A 12 volt lighting plant had to supply all the power for the house and the amateur radio station. Genemotors from an ex-army Type No 11 set were used for the HT supply, a 250 volt one for normal low power output and a 350 volt one for higher power output with a maximum transmitter input power of about 15 watts. I should mention it was necessary to operate on CW for the first six months before being granted a phone permit.

In the early post war years it was necessary to obtain permission from the Superintendent of the local Radio Branch to operate the station away from the home address. Should the operation be interstate, permission had to be obtained from the Chief Inspectors' Office, Melbourne; even so, many amateurs applied for such a permit each time they wanted to go mobile or portable.

My first portable operation away from home was in early 1949 with an ex-army Type A Mk 3 transceiver (it was even taken on our honeymoon). This transceiver was a crystal controlled low power portable that was used mainly for special and spy type work during WWII.

In the 1950s, like most other amateurs, equipment was home made and I made

up a 7 MHz transceiver with a 2E26 valve for the final stage. This was amplitude modulated by the audio output stage of the superhet receiver, and a disposals genemotor provided about 250 volts for the HT supply. The transmitter input power was less than 10 watts.

Mobile antennas were usually home made and for some time a base loaded 8 ft whip made from a military tank whip was used. Later, a centre loaded version was made up and this proved to be an efficient mobile antenna system; for a

single band antenna this would be as good as any commercial mobile antenna available today. A piece of round nylon about 50 mm in diameter and 125 mm long, tapped at the ends, was grooved for the turns of the coil which was wound using silver plated wire from a disposals transmitter coil. The former was made up on a lathe and had inserts at each end that held the two 4 ft lengths of tank whip (copper coated steel tube). An ex-army antenna base was mounted from the rear bumper of the Austin A40.

Mobile Equipment in the 1960s

Commercial transceivers, antennas and solid state power supplies became available, and the FC Holden car of that vintage had sufficient room to carry such equipment. Having a steering column gear change, it had sufficient room under the dash to mount the HF transceiver on the transmission hump.

At this stage, mobile equipment was updated to a Galaxy transceiver, and an

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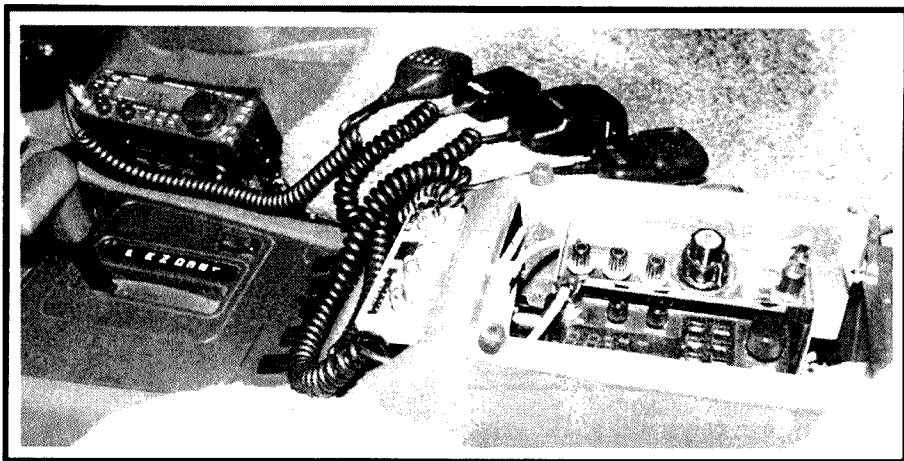
- At World Radio conferences
- To the ACA
- On the Radio Communications Consultative Committee

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**Your
Hobby**

**Your
Voice**



The TS-50S mounted to the right of the gear lever console, the Uiden 27 MHz CB set mounted between the gear lever console and the centre storage console, and the Uiden UHF CB set and Kyokuto 2 m FM transceiver mounted inside the centre storage console (shown with its lid raised).

Aztec solid state power supply replaced the genemotor in the engine compartment. A set of helical whips was made up from the details in *Amateur Radio*, March 1965, designed by the late Max Swaby VK4DA. These whips worked very well and were not so noticeable as the larger mobile antennas.

A mild steel bracket bolted under the off-side rear of the car, and extended just clear of the bumper bar, was used as a support for the base of the mobile HF antennas. This outfit proved to be a really good mobile station. It could run 100 watts output on any of the five HF bands. The only trouble was the excessive power drain from the car battery; this was about 13 amps on receive, mainly to light up the valve heaters. One night, with the head lights on and operating mobile for a couple of hours on a trip, I found the battery completely flat when switching off the engine at a service station!

Another antenna used at this time was a Webster Bandspanner. This antenna performed very well but is a heavy antenna and at times worked loose, damaging the 3/8 inch thread on the mount. The spring at the base of the antenna was not sturdy enough, allowing the antenna to bend too far back at touring speed so it was guyed by a piece of nylon cord to the rear of the car. In time, after many mobile miles, trouble developed with the wiper spring making contact with the correct turn of the internal coil to tune the antenna, and this needed attention.

In the 1970s

With the availability of a completely solid state transceiver, such as the Atlas 210X, the DC/DC power supply was no longer required and the heavy valve heater drain no longer a problem.

There was plenty of room to fit the Atlas into our new Valiant. With a steering column gear change, the Atlas was able to be mounted on the transmission hump. A set of Scalar whips was used in place of the Webster Antenna. This was quite a good mobile HF outfit 25 years ago.

In the 1980s

After having the Valiant written off in an accident in 1984, it was time to look for

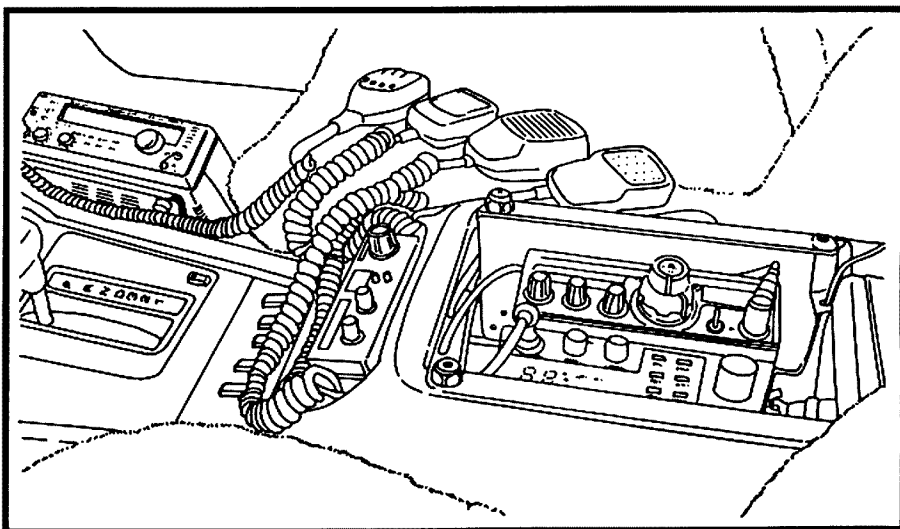
another car. With mobile activity in mind, the requirement was for a large car with automatic transmission and a steering column gear change. Such a car was a 1980 V8 Fairlane. The Atlas transceiver and Scalar whips were easily transferred over to the Fairlane.

Over the years, interest in mobile activity continued to grow and a two metre Kyokuto transceiver was fitted between the driver's seat and the centre mounted small seat in this car. The 2 m antenna was a quarter wave whip on a knock down mount mounted on the gutter on the driver's side. A 70 watt Mirage amplifier for 2 m sat on the floor underneath the driver's seat.

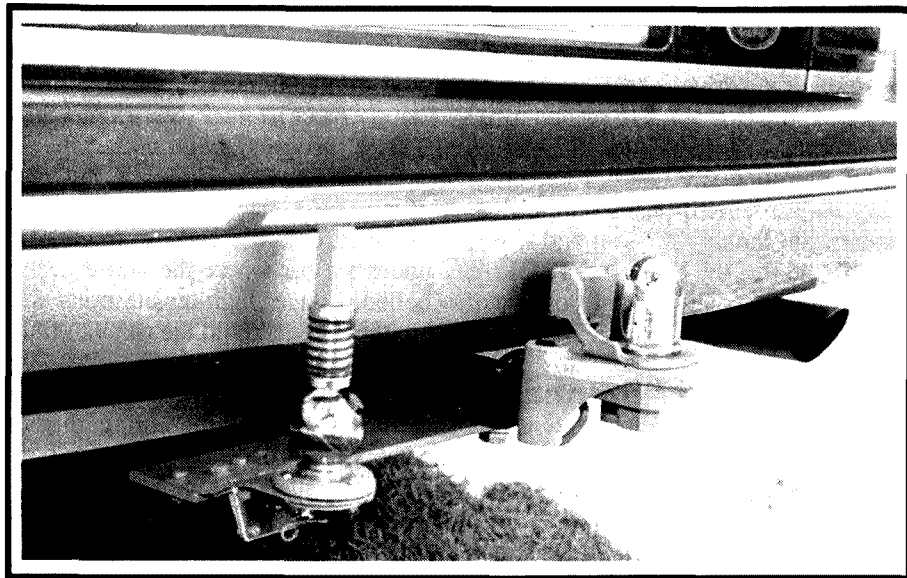
In the 1990s

There was room alongside the Kyokuto transceiver to fit a 70 cm Kenwood TM-421 transceiver running about 20 watts output. The 70 cm antenna was a commercial windscreen type mounted on the inside of the windscreen. This seemed to work well enough for the limited type of mobile repeater operation undertaken on this band.

Having bought a caravan and retired from work in 1986, we went touring with friends who were not amateurs but had CB. We then added an AM 27 MHz, and also a UHF FM CB set to the list of transceivers, making a total of five transceivers. The 27 MHz and UHF CB sets were mounted in a vertical position alongside the transmission hump. The 27 MHz antenna was a short whip from



A line drawing of the photo above clearly shows the layout of the mobile transceivers and microphones.



The HF antenna mount at the rear of the car (see text for details).

Tandy, about 300 mm long, mounted on the passenger's side roof gutter. This band was only used to keep in touch with the cars in sight and a larger 27 MHz antenna was carried in case it was needed.

The UHF CB antenna was a quarter wave whip mounted on a Z bracket at the side of the bonnet, near the BC antenna. A 3 dB gain-type was carried in case it was needed. Although five antennas were fitted to the car they were not very noticeable. In most cases only one transceiver was used at the one time. The 2 m whip was folded down when not in use and the HF Scalar whip was only fitted when required, such as travelling on a tour. Around the city, the antennas were not too obvious.

It wasn't long before it was decided to fit the Kenwood TS-430S on the transmission hump, in place of the Atlas, for extended touring. The Atlas in its mount will fit inside the Kenwood mount and was often used like this for local HF mobile work to save having to disturb the home station TS-430S.

Automatic Antenna Tuners

About this time a new type of antenna tuner was purchased. This was a Ranger (Smart) Antenna Tuner and was mounted in the boot of the Fairlane, connected by a short heavy lead to the base of the antenna mount.

For an antenna with this system, an ex-army tank whip 250 cm long was used

and this was tuned automatically by the Ranger antenna tuner to any HF frequency required in and between the 10 and 80 metre bands. Although the efficiency may not have been quite as good as resonant whips on the lower frequency bands, it worked well enough, and was very convenient in band changing while moving along.

On 14 MHz and higher, results were very satisfactory. The convenience of not having to change antennas when changing bands was a great bonus.

Power Supply Leads

With this installation the 12 volt lead was not heavy enough, even though it was a separate feed from the battery. At times distortion showed up on SSB due to the poor power supply regulation. It was found that a large computer capacitor,

connected across the 12 volt terminal strip (under the seat) that feeds the HF transceiver, helped to reduce this distortion.

A New Mobile Installation in 1995

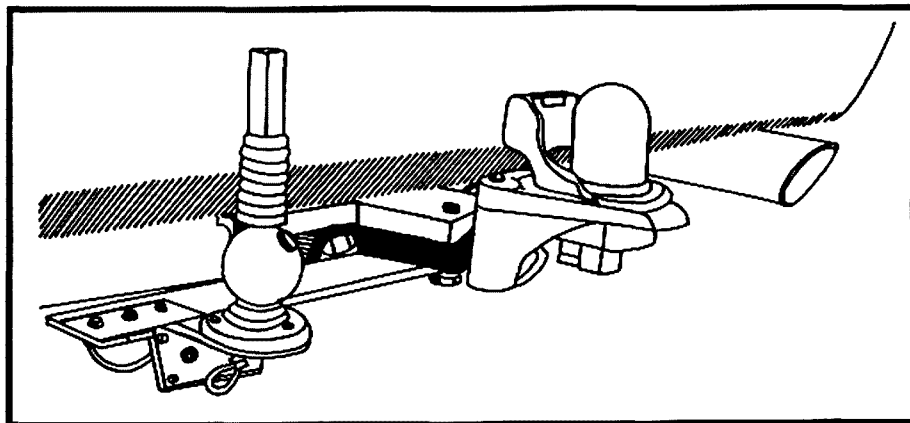
After having the 1980 Fairlane for over 10 years, and the odometer up to 250,000 km, mainly pulling a caravan all over and around Australia, it was time to consider changing cars. A 1991 V8 Fairlane was chosen because a large car was still required for caravan work.

At last we had to face the fact that Fairlanes are no longer available with steering column gear change, and these cars seem to have computers to control nearly everything. It was decided that this new project would be made an interesting challenge. How do you install all this equipment into a modern car without drilling any holes and taking all the precautions so that the car computer equipment is not damaged?

For days it was necessary to back the car out and just sit and meditate as to how best to do this installation.

Equipment Required

In this car a Kenwood TS-50S was to be used with an AT-50 automatic antenna tuner for HF work in place of the TS-430 and the Ranger antenna tuner. Also, a 2 m transceiver with the 70 watt amplifier, a 27 MHz AM CB set, and a UHF FM CB transceiver. It was decided not to install the 70 cm FM transceiver because so little operation had been done on this band while mobile and, if required later, a dual 2 m and 70 cm set could be fitted.



A line drawing of the HF antenna mount at the rear of the car.

It was necessary to have an auto electrician install the electric brake controller for the caravan, so I gave him the job of running a heavy duty multi-core screened cable for the plus and minus 12 volt supply from the battery, and also two co-ax cables, through the firewall. At the battery end of the 12 volt cable I mounted a 30 amp relay-type cut-out, using a spare hole in the car frame near the battery carrier. The other end of this cable was terminated in a plastic box fitted with a control switch, fuse, and several four pin Plessey connector sockets with each pair of pins connected in parallel (this type of connector is used for all 12 volt connections in the car and around the home station).

Mounting the Transceivers

Fitting three transceivers into the compartment of the centre column console in this Fairlane is possible. When the plastic inner frame of this compartment is removed, quite a large area is available, large enough to mount two small units. A sheet of aluminium was made into two brackets, fitting a sheet to each side of this compartment, and screwed into place using the previous top mounting screw holes. This was for mounting the two small transceiver brackets, one to each side.

It was necessary to fit a couple of longer buffers under the lid of this compartment to get sufficient depth. It was also necessary to modify the microphone connectors and bring the leads out at a right angle so that the lid would fit down. Now we had the Uniden UHF CB set and the Kyokuto 2 m set mounted in this compartment. In front of this area is a large plastic grommet covering a large space behind the gear lever. Removing this grommet covering revealed enough room to mount the Uniden 27 MHz CB set.

For HF operation, the TS-50S transceiver was mounted on a sheet of aluminium of sufficient size that it fitted in under the plastic covering of the centre column console and held the TS-50S in a vertical position on the driver's side of the centre column. A piece of timber shaped to fit under the heat sink helped to support the TS-50S on the floor of the car, thus allowing clearance for the

connecting cables. The TS-50S can be moved to and fro as required to suit the position of the driver's seat.

The two CB sets, a 2 m set and a 100 W HF set were mounted in position without drilling any holes. The Mirage 70 watt 2 m amplifier sits on the floor underneath the driver's seat and it was also found that the Kenwood TS-211A, a 2 m FM set, would fit in the position of the Kyokuto.

Mounting the Antennas

The 477 MHz CB antenna is a window stick-on type on the rear window with the length adjusted for resonance in this band. It could easily be mistaken for a mobile-phone antenna and does not look out of place on the car. The coax for this antenna had to run along under the carpet near the off-side doors and around the rear of the rear seat to the window mount.

Two Z type brackets were purchased and mounted either side of the bonnet and held in place by existing screws in the car body. There was just enough room for the bonnet to close over the bracket and RG-58AU coax.

Of the two leads installed by the auto electrician, one was for the 27 MHz AM set and the other for the 2 m band quarter wave antenna. I prefer to use a quarter wave antenna on 2 m because of appearance; also, the antenna does not whip around as much, causing less flutter, and causes no trouble driving through the garage doorway.

The HF Antenna

It was decided to use only resonant antennas with this car, such as a set of Scalar HF Whips, and not to use the Ranger automatic antenna tuner because of fear of trouble with the car computers. The Kenwood AT-50 automatic antenna tuner was mounted inside the boot and held in place by a bracket that was secured to existing holes in the side of the boot floor. A wooden box was made to cover this unit for protection.

A special connector cable is available from Kenwood (PG-4M 6 metre cable) to connect the TS-50S inside the car to the AT-50 mounted in the boot. Another length of RG-58AU was run with this control cable under the carpet to the side of the doors and along into the boot to the AT-50.

Where and how to mount the HF antenna without drilling holes was the next problem. This was overcome by using a piece of mild steel 75 mm wide, 300 mm long and 6 mm thick.

Two holes were drilled in this piece of steel near one end so that it could be mounted onto the caravan towing bar, under the bar where the goose neck is bolted. Longer high-tensile bolts were now required to hold the caravan fitting goose neck.

The 300 mm length of steel runs along to the off-side of the car so that the antenna clears the number plate. A lighter plated metal bracket protrudes from this strong support, and onto this is mounted the antenna mount and spring.

The coax cable from the AT-50 runs through a grommet hole near the spare tyre well and along inside a thin piece of plastic conduit fitted under the 30 mm steel plate to the base of the antenna.

The light metal bracket, protruding from the heavy steel plate that holds the antenna spring on its top side, is fitted with a couple of sockets underneath so that the TS-50 in the car can be connected to a resonant external antenna in place of the mobile whip. Also, the transceiver inside the caravan can be connected to the mobile antenna on the back of the car.

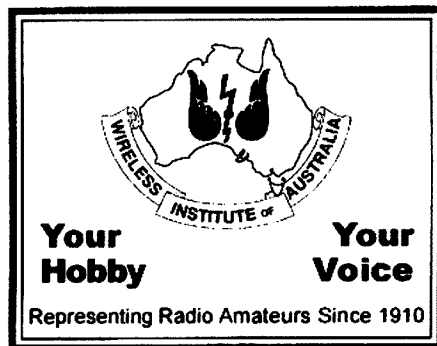
This mobile installation has proved a very satisfactory arrangement.

In closing, here are couple of quotes from a Queensland Transport booklet.

"Forward mounting should only be undertaken when it is impossible or impractical to install the antenna to the rear of the vehicle".

"Only one antenna may be fitted to the front of a vehicle and must be fitted to the left side. The maximum diameter permitted is 75 mm".

ar



■ Technical

Technical Abstracts

Gil Sones VK3AUI
C/O PO Box 2175
Caulfield Junction VIC 3161

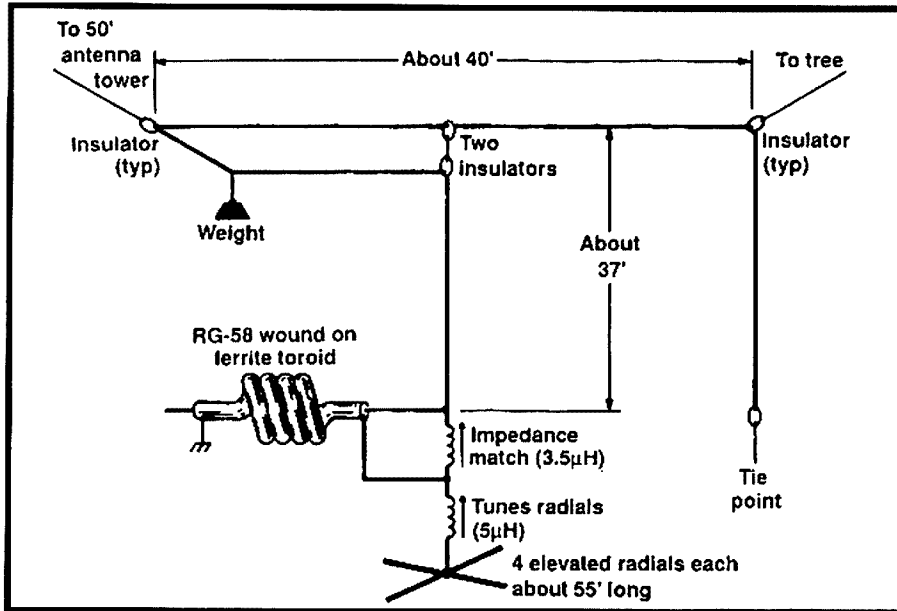


Fig 1 - The S92SS 160 Metre DX Antenna.

S92SS Limited Space Antenna for 160 Metres

A solution to the need for a 160 metre DX antenna appeared in the *Radio Fundamentals* column of Bill Orr W6SAI in the August 1997 edition of *CQ Magazine*. The antenna was the one developed by Charles S92SS to get on 160 metres from Sao Tome e Principe.

Charles S92SS had a number of problems which he had to tackle to produce a 160 metre antenna. The yard was small and partially covered by a concrete deck.

Elevated radials were used, as buried radials were not feasible. These radials were only about 55 feet long and could not be run in straight lines. Four radials were used and a loading inductor was used between the radials and the coaxial cable shield.

The radiator was a quarter wave wire which had to be folded up as shown in Fig 1. The top of the antenna was supported by lines to a tower and a tree.

The coaxial feedline was wound onto a ferrite toroid which had been salvaged from a TV set horizontal line transformer.

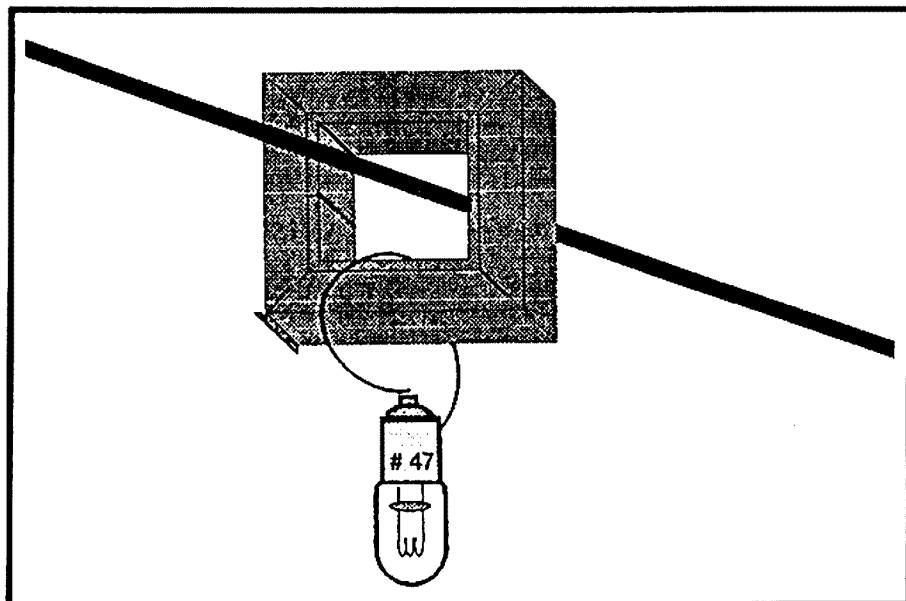


Fig 2 - Simple RF Current Indicator.

This was done to limit RF on the feedline outer which might upset the equipment in the shack.

During tune-up, RF currents flowing in conductors were assessed using a simple RF current indicator which is shown in Fig 2. This uses a split ferrite core such as is sold by MFJ and others. Tandy, DSE, Jaycar and others may have suitable cores which are sold for EMC work. The lamp is a low power pilot lamp, and transmitter power should be adjusted so the lamp does not burn out when making comparisons. The lamp could be a 6 V 50 mA type if you haven't got the USA type used.

Tune-up consisted of adjusting the radiator length, and the radial tuning and the matching inductors for minimum SWR. The three adjustments also had to be trimmed so as to have minimum current in the coaxial cable outer as well as minimum SWR, and to avoid heating in the choke in the coaxial feedline. This also coincided with best field strength. The current was minimum in the coaxial feedline outer, and the current in the antenna wire was the same as in the ground system and was split evenly between the radials.

This was a somewhat complex iterative process of tuning up but a good signal was the reward. The whole antenna is built using fairly limited resources and gives an idea of what can be done to get a signal on air.

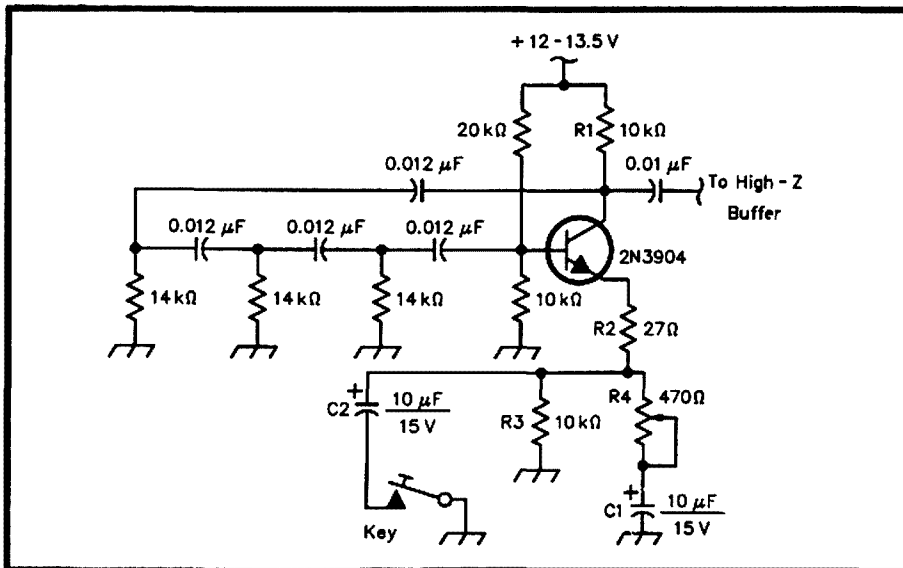


Fig 3 - K7OWJ Sidetone Oscillator.

CW Sidetone Oscillator

It is often difficult to produce a good CW Oscillator for sidetone or as a practice oscillator. A sine wave output without clicks and chirp, although desirable, is hard to produce.

A circuit for a suitable oscillator appeared in the Bob Schetgen KU7G edited *Hints and Kinks* column in the December 1997 issue of *QST*. The design is the work of Denton Bramwell K7OWJ.

The circuit is given in Fig 3. It is a basic phase shift oscillator and it is keyed so as to shift the gain just above and below the point at which oscillation occurs. This results in keying which is shaped and without clicks and chirp as the changes between key up and key down are minimal.

The circuit is arranged with R1, R2 and R3 chosen to give a gain of 1. R4 and C1 are adjusted to the point where oscillation just ceases with the key up. They set the AC gain to a point just short of the point of oscillation. The key shunts the capacitor C2 in parallel, increasing the gain so that oscillation occurs.

The onset of oscillation is influenced by the value of R2 which is chosen so that the gain is sufficient for oscillation and the oscillation onset is nicely shaped. This should not need to be adjusted but can be used to vary the turn-on of the oscillator.

The output of the circuit is high impedance at about 10 k. However, it

should feed just about any amplifier. The circuit draws very little current. At initial switch-on, the first few dots stabilise the circuit.

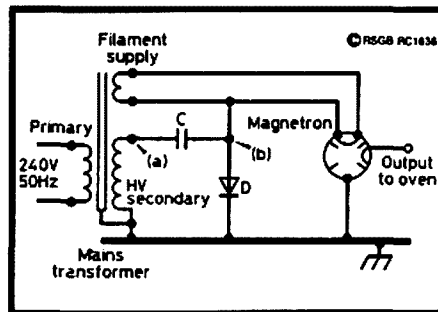


Fig 4 - Typical Microwave Oven Power Supply.

Microwave Oven Transformers

More information concerning the use of microwave oven transformers for high voltage power supplies for linear amplifiers has been published.

In the *Technical Topics* column of Pat Hawker G3VA in the January 1998 issue of *RadCom*, information concerning the working and characteristics of the microwave oven power supply from John Lawrence GW3JGA was published. This explains the operation of these power supplies which make use of high leakage reactance to provide regulation.

There were two references given. The first was to an article *Microwave Oven Power: A Technical Review* by John E Gerling in *J Microwave Power, EE*, 1987. The second reference was to US Patent 3,396,342 to Feinberg of Advance Transformers which covers a low cost form of regulation. The idea was developed in the mid 1960s.

In *QEX*, Jan/Feb 1998 issue, Randy Henderson W15W presented a linear amplifier high voltage supply using microwave oven power transformers. Randy had a way of overcoming the high leakage reactance and so achieving better regulation. The power supply circuit cannot be given but it was fairly conventional. Unfortunately, it used direct rectification of the AC line voltage to provide a screen supply. This is a safety hazard, particularly in Australia.

The typical circuit of a microwave oven supply is shown in Fig 4. The circuit

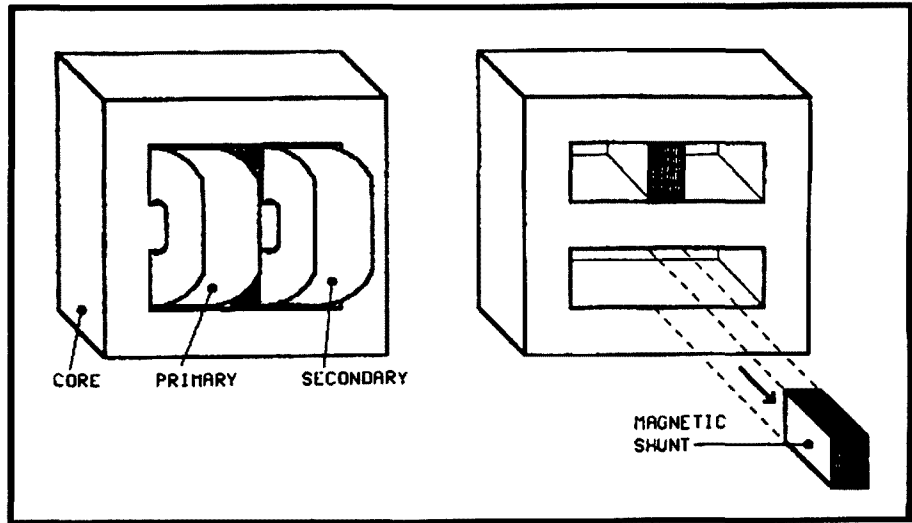


Fig 5 - Microwave oven transformer core and construction showing shunt to be removed.

is fairly basic when stripped of all the timer circuitry. Regulation is obtained by using a transformer with fairly high leakage reactance. This may result in poor voltage regulation under the different requirements for a linear amplifier power supply.

Randy found that many transformers were constructed with magnetic shunts to provide the leakage reactance. These shunts were pressed in place and could be removed. This should not result in any damage to the windings and insulation if care is taken when removing the magnetic shunts. Transformer construction showing the placement of the shunts is shown in Fig 5. The shunts are pressed in very tightly and may be held together with a rivet.

To remove the shunts, wooden blocks are placed under both sides of the core

to keep the windings clear of the work surface. The shunts are then driven out with a hammer and a punch. Another way of holding the core is to fasten it to a solid frame whilst removing the shunts. Remember, the idea is to remove the shunt without damaging the windings, insulation, or core. A two pound hammer and a punch with a flat end almost as big as the shunt is recommended.

Some have removed the secondary windings in order to rewind a low voltage winding. This can be done by cutting the HV winding away with a wood chisel. Sufficient room is left to wind a low voltage winding on to the core. This may be difficult as it is often impossible to disassemble the core. You would have to wind into the window previously occupied by the HV winding.

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RF Exposure on Capitol Hill

Well, it had to happen! The subject of RF exposure has been legislated on in a big way. Where? You guessed it, in the United States!

The American Radio Relay league (ARRL) has just released a book explaining and listing the things US amateurs have to do to comply with RF radiation legislation as passed by the US Congress to enable them to operate an amateur radio station. This legislation is of course to be enforced by the FCC.

The publication called 'RF Exposure and You' attempts to bring amateurs to

terms with the new RF exposure rules, which David Sumner K1ZZ, President of the ARRL, says "*are now a part of the regulatory landscape (in the United States) and are likely to remain so*".

The book was written with a mind to make understanding of the RF exposure rules easier and to emphasise that "*with this information, you will be able to operate your station legally and safely - and you will be able to operate*" said David Sumner.

(Thanks to the ARRL for this news item.)

ar

WIA QSL Bureaux

The official list of VK QSL Bureaux. All are Inwards and Outwards unless otherwise stated.

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VK2	PO Box 73, Teralba NSW 2284
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VK4	GPO Box 638, Brisbane QLD 4001
VK5	PO Box 10092, Gouger St, Adelaide SA 5000
VK6	GPO Box F319, Perth WA 6001
VK7	GPO Box 371D, Hobart TAS 7001
VK8	C/o H G Andersson VK8HA Box 619, Humpty Doo NT 0836
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Repeater Link

DTMF Decoder

Will McGhie VK6UU
 21 Waterloo Crescent, Lesmurdie 6076
 Packet: VK6UU@VK6BBR
 E-mail: will@vale.faroc.com.au

After designing and building DTMF decoders over many years, I have put all the ideas together and produced the accompanying circuit. The result uses as few components as possible and is simple to understand.

Part of the circuit appeared with the remote mute in the March 1998 *Repeater Link*; for a description of the audio amplifier, frequency compensation and

BCD-to-decimal decoder, refer to this article.

Code Store

Once the DTMF digit is decoded from the 4028 IC, the single digit is of little use as it is. A code or string of digits is needed for control of a particular function and three digits is a good choice. The single digit from the 4028 BCD-to-

decimal decoder is not latched and is only there while the corresponding DTMF tone is present. Pushing buttons 1, 2 and 3 produces a sequential high on digit 1, 2 and 3 out of the 4028.

As soon as button 2 is pushed, the high on digit 1 out of the 4028 goes low. What is required is a brief store of digit 1 and then digit 2. This is done by the 4.7 μ F capacitor and 1 M resistor on the inputs to the 74HC11 3 input AND gate. Digit 1 goes high and is stored for two seconds as is digit 2 stored, followed by digit 3 resulting in all inputs to the gate being high and hence the output of the gate goes high.

This is where a choice of code is made. The circuit shows digits 1, 2 and 3 as on and 8, 9 and 0 as off. Connect any three digits to the top AND gate for on, and any three digits to the bottom AND gate for off. The circuit from this point on

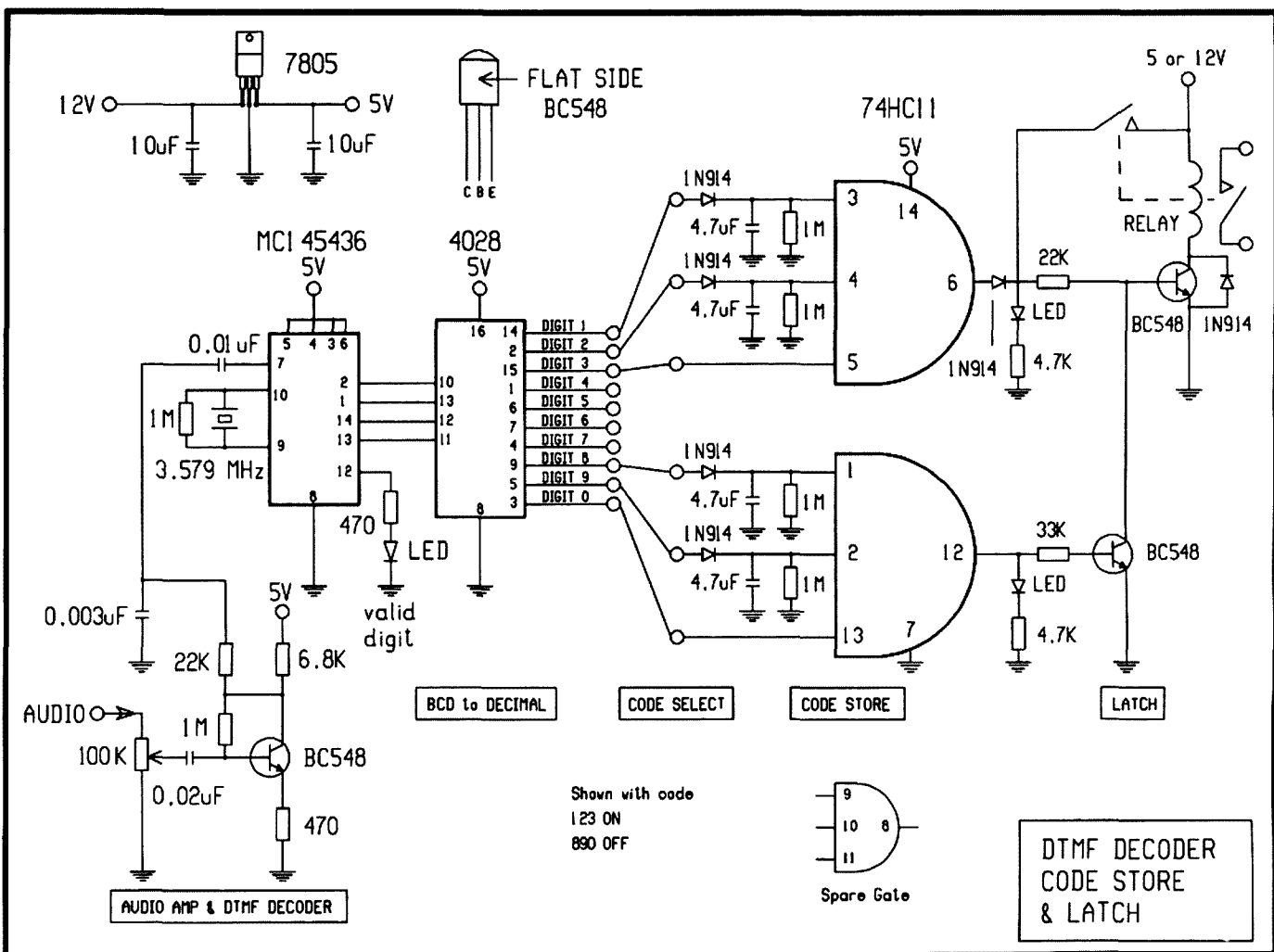


Fig 1 - Schematic of the DTMF decoder code store and latch. (Drawn by VK6UU)

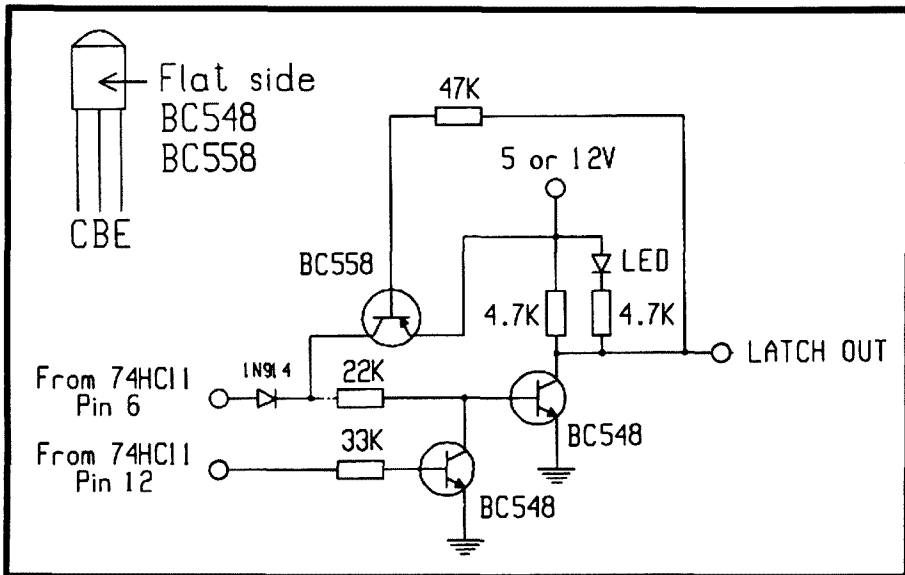


Fig 2 - Schematic of the alternate latch for the DTMF decoder. (Drawn by VK6UU)

would have to be duplicated for more on/off functions; only the DTMF decoder and BCD to decimal remain common.

Note that with the circuit as shown, the first two digits can be reversed and still result in a valid code. This may be a concern for some applications and in next month's *Repeater Link I* will present some alternate code store circuits courtesy of Mac VK6MM.

Latch

This high out of the gate, however, is only there while the gate storage remains high and the final digit is high. What is required is a latch at the output of the code gate.

After experimenting with many different latch integrated circuits, I did not find one that I liked. For this type of use, the latch has to have separate inputs for a given DTMF to turn on and a different DTMF code to turn off. Also, the latch must power up in the same default mode each time.

Many latch integrated circuits do have power up reset defaults but the output of the latch still has to drive a relay or transistor. Putting all these requirements together resulted in the latch circuit as presented.

The high from pin 6 of the 74HC11 goes high turning the BC548 on and this transistor operates the DPDT relay. One set of contacts from this relay is used to latch the driver transistor on and hence the relay as well.

Once the output of the 74HC11 goes low, the relay remains on. The second relay contact is used to control whatever

you require and remains latch on until the off code is sent.

The off code from pin 12 of the 74HC11 goes high, turning the accompanying transistor on and shorting out the base of the relay driver transistor to ground. This causes the relay to drop out and the latching voltage via the relay contacts to be removed as well. Once the off code stops the relay remains off.

The on code latches the relay on and the relay remains on until the off code is received. Included also is a transistor-only latch circuit that can be used in place of the relay latch. The output of this latch is a logic level change. Both the relay latch and the transistor latch can operate from five or 12 volts, depending on your requirements. Of course, the relay needs to be changed to match the voltage that is used. The rest of the circuit runs from five volts regulated.

Alternate Latch

If you don't like the relay latch, then the second circuit shows a transistor latch. Output of this latch is a logic output. Note the LED indicator circuit. If you use just a resistor and LED in series, the latch latches on its own due to the voltage drop across the LED, even when the LED is not drawing current. LEDs act a bit like a Zener and this lower voltage is enough to turn the BC558 on. The shunt resistor across the series resistor/LED combination overcomes this problem. The LED can be omitted if you don't require an indication of the latch state.

Construction

There are many options when it comes to constructing this circuit. As mentioned, the DTMF decoder chip and the BCD-to-decimal chip only require one off. However, the code store gates and latch circuits have to be duplicated for each on/off function. The 74HC11 gate IC has three gates per chip, one of which is not used.

Perhaps the best way to construct the DTMF decoder is to have one board for the common DTMF and BCD-to-decimal chip, followed by a second board for the code select and store function, with a third board for the latch relay driver function. Remember, if you require several on/off outputs the amount of circuitry multiplies resulting in considerable component space.

There are many variations to this circuit, but the intention was to produce a simple DTMF decoder with as few components as possible, that is easy to understand and, as a result, easy to construct and fault find. Next month, a few options.

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■ Construction

Making Boxes with Ordinary Tools

Drew Diamond VK3XU
45 Gatters Road
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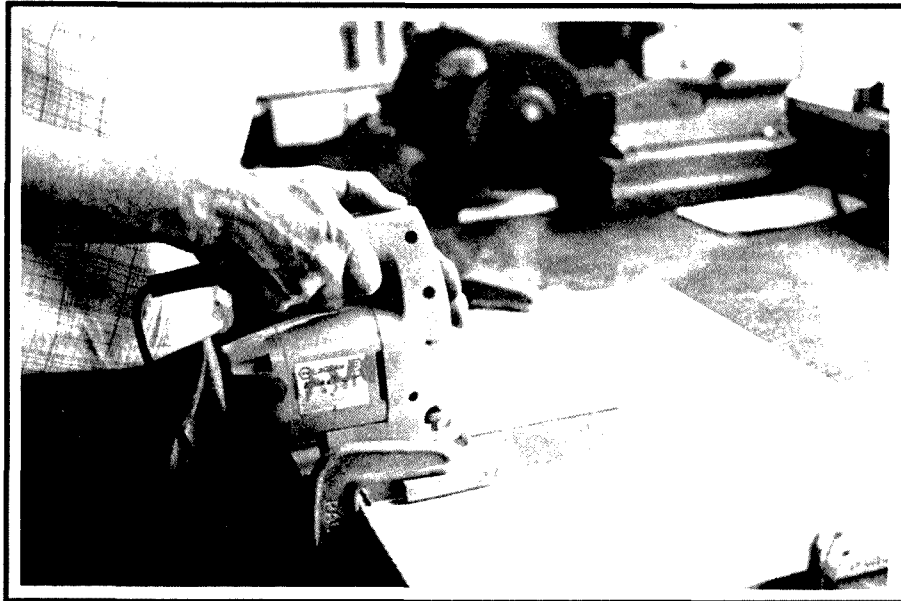


Photo 1 - Jig-saw set-up.

jig-saw. A short length of Eclipse (TM) junior hack-saw blade, about 50 mm, produces a narrow kerf (blade gap) and, with practice, yields a reasonably smooth edge which requires very little filing.

Photo 1 shows the idea. An adequately sized piece of chip-board (or similar) has a 3 mm wide saw-cut about half way in to accommodate the jig-saw blade. Using two G-clamps, the chip-board is fixed to the workbench with sufficient over-hang to allow the blade to operate without striking the bench. Accurately rule a line on your sheet metal where the cut is to be (metalworker's motto: *measure twice - cut once*).

Now, using a G-clamp each side of the line, fix the sheet onto the chipboard with the line aligned over the cut-out. Remember to make the jig-saw cut on the waste, or "non-critical" side of the line. A strip of masking tape along each side of the line will protect the sheet from being scratched by the foot plate of the jig-saw. Always wear approved safety specs when using power tools of any kind. Clean up rough edges with a flat mill file.

With the sheet cut to size, carefully mark where the bends and holes must be. A black felt-tipped marker pen is ideal as background for accurate marking. Use a sharp pointed scribe as your marking tool. Centre punch all intersections where holes are to be drilled. To avoid errors, it is a good plan to note the hole size adjacent to the punch mark (see Photo 2). It is generally better to drill and cut all holes before making any bends, as the sheet is much easier to work when flat. Where a lid or cover is required, measure up and make this component after the basic box has been bent as described below.

So, you've collected all the components for that planned project. Now for a nice case to house the job. But the ready-made boxes available are not quite right, or too expensive. Few amateurs have ready access to the sort of guillotines and benders used by professional sheet-metal workers. However, quite good equipment enclosures can be made with tools ordinarily found in the home workshop.

Aluminium sheet is generally regarded as the most appropriate material for one-off electronics projects. It is easily worked by the amateur, and available in several thicknesses. Pay a visit to your local aluminium merchant. Remember to bring your plan and a tape-measure. My bet is that just inside their door you will find a bin marked something like "Off-cuts 50% off". With a little delving you should find some material to suit the job in hand (and perhaps one in the planning

stage too). Buy a bit more than you think you'll need. Unless you are very lucky, the sheet(s) available will be either smaller or larger than required.

Without a sheet-metal guillotine, sheets larger than can be cut with an ordinary hack-saw may be rather awkward to reduce to size. Try an electric

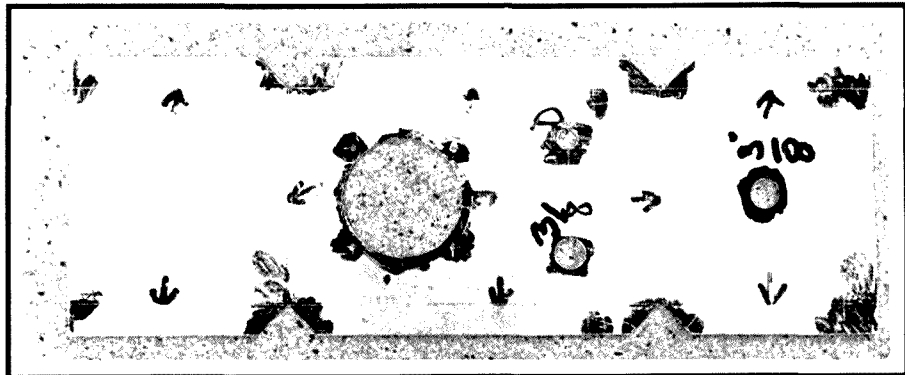


Photo 2 - Job marked out and holes drilled.

Angle-iron is still regarded as one of the most useful home metalworking aids. You will need a pair of irons about 300 to 400 mm in length, perhaps longer for bigger jobs, and some smaller lengths which are dictated by box dimensions. Part of my collection is shown in Photo 3. This material is remarkably cheap. A visit to your local steel merchant (off-cut bin again) should offer a good selection of pieces - typical price is about 50 cents each.

Photo 4 shows one approach to bending longer lengths. Our customary bench vice is augmented by a second vice, which may be G-clamped to the bench at an appropriate distance, with jaws in-line. The job is then firmly clamped in this "super-vice" as shown. Using a nylon faced hammer (or an ordinary hammer with a rubber cup fitted onto the face), carefully dress the bend over, a little at a time, by working up and down the length until a smooth 90-degree bend is obtained.

Smaller length bends can generally be performed in the bench vice. Select or make an iron which is a nice fit inside any existing bends (see Photo 5). Note the scraps of hardwood fitted into the vice jaws to protect the job, and to obtain an interference free grip on the iron. A third piece of hardwood is held in one hand as shown in order to prevent the hammer marking the job.

If the box is to be painted, or to remove any small imperfections in the surface, the box should be prepared with a medium grade emery paper, as shown in Photo 6. Avoid finger-printing by holding the job on the edges. Rub back to produce an even cross-hatch surface, thus providing a good "key" for the paint.

Finally, if desired, apply an auto spray under-coat (or two, with a rub-down between coats), then a top-coat of appropriate colour. Obey paint maker's instructions. To avoid runs, position the job so that you are always spraying a horizontal surface; avoid the temptation to paint the whole job in one go. One of the metallic finishes such as "gun-metal black" (actually dark grey) is suggested, and will give the product a pleasing and durable finish (Photo 7).

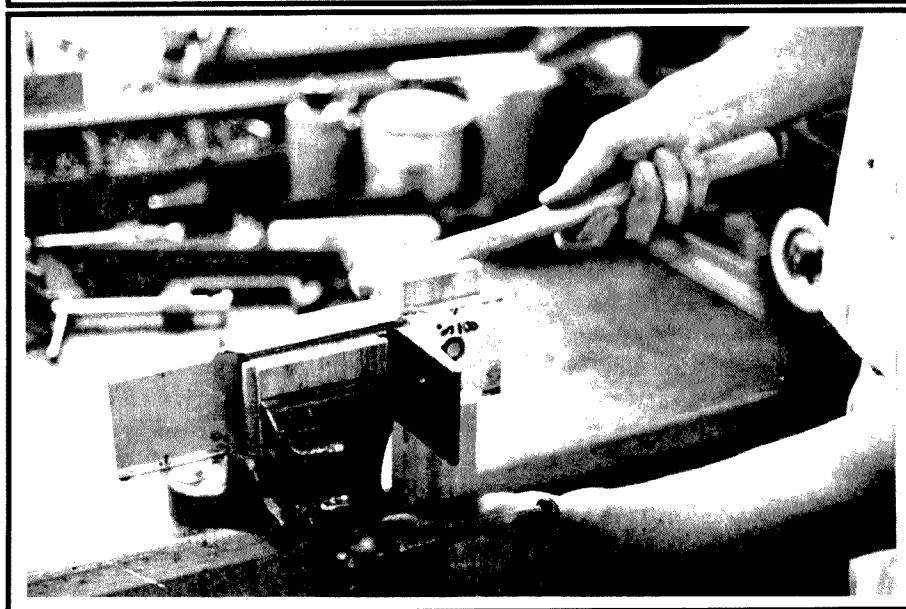
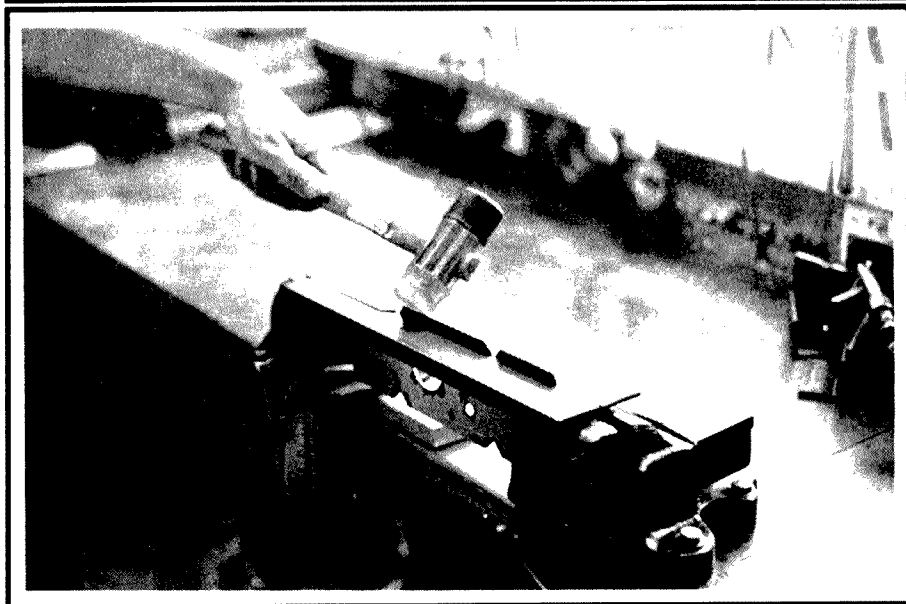
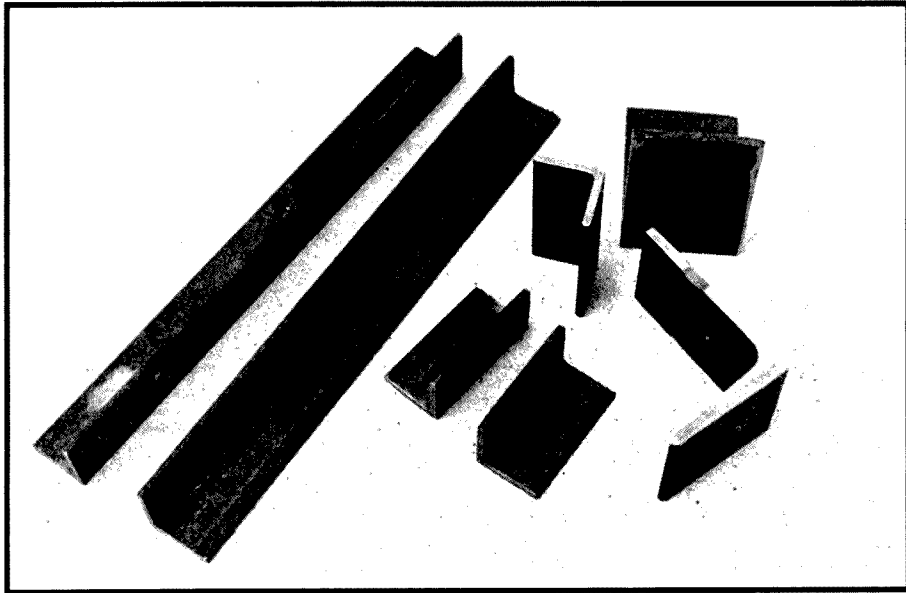


Photo 3 - Angle irons.
Photo 4 - "Super-vice" set-up.
Photo 5 - Bending in the vice.

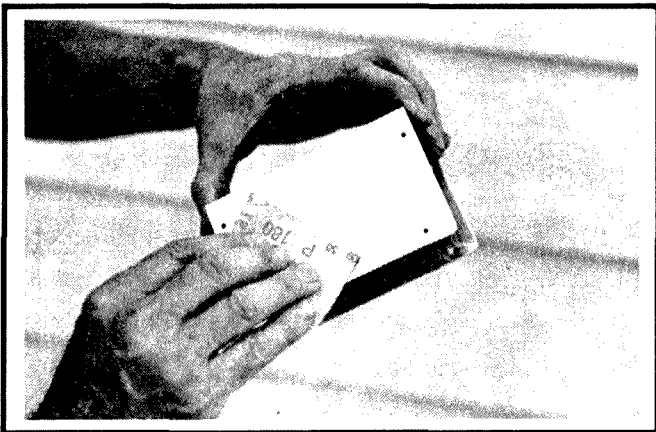


Photo 6 - Preparing the surface.

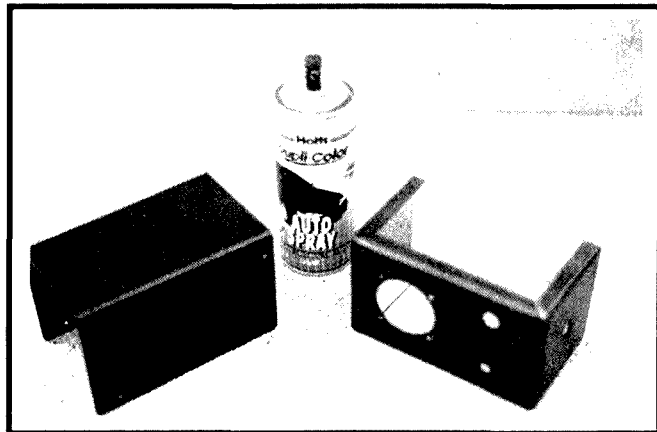


Photo 7 - Completed product.

References and Further Reading

1. *Radio Communication Handbook*; RSGB, 6th Edition, Ch 16 (excellent).
2. *A Simple Sheet Metal Bender*; D Diamond, # 44 *Journal of Melbourne Society of Model and Experimental*

Engineers. (Metal fabricated bender made using lathe, drill-press and welder - copy of plans available free from the author - large SASE please!).

3. *Try Building Your Own Equipment*; G Diana N2JGU; *QST* March 1995.

4. *Homebrewing Equipment from Parts to Metalwork*; P Johnson W7KBE, *Ham Radio (USA)* March 1988.

ar

■ General

The Radio Came Back!

Dominic Bragge VK2YAK
6 Ann Street
Frenchs forest NSW 2086
e-mail: dominicb@jna.com.au

I have a little story to tell. On Wednesday morning, 3 December 1997, my wife and I were in a hurry to leave home. I rushed out to the car with my H/T in hand. Inevitably I'd forgotten something, so I put my H/T down on the bonnet of the car while I nipped into the garage. "Black radio on a white bonnet - can't miss it", I thought.

Yes, well you guessed it. Two left turns and we were out in the peak hour traffic at full acceleration (not that great in an old Pulsar - but still dangerous for the unattached H/T!).

Mid afternoon I received a phone call at work from our house guest who had just received a perplexing phone call. "A gentleman rang; he said he has some electronic equipment of yours and he's

calling from the Belrose Police Station. He didn't leave a name."

Hmmm! Knowing that there is no 'Belrose Police Station' it must be one of my HAM mates playing a joke (I thought it was VK2ETJ with too much time on his hands!). "Don't worry about it", I said to the intermediary, "it's a joke; forget about it".

Half an hour later, our house guest phoned me again. "Dom, I think this guy is serious. He says it's a hand-held radio and it's got your call sign on it, VK2YAK. The radio is at Frenchs Forest Police station".

I nearly fell off my chair as the morning's events replayed themselves in my head. "How could I be so stupid." Well, sadly too easily.

I phoned the police and enquired about the state of the radio. The constable said, "Well, it looks well used but I can't see any obvious damage. When I turn it on it shows 146.875 and a flickering 7.2/7.1."

Thank God that was the last frequency I was listening to, not 468.4! "Incredible!" I exclaimed. "I'll be right around."

I picked up the H/T, made a few transmissions right there in the 'cop shop' and it seemed fine. The constable explained that a gentleman had seen it lying on the road (six lanes) and had braved the traffic to rescue what he thought was a mobile phone. He took it around to the police and together they had worked out that it was actually a transceiver.

While the policeman was taking down the serial number, thinking that this was going to be just another permanently lost gadget, the finder also realised that those little letters stuck on the front must be some identification! He phoned the Australian Communications Authority who identified the callsign - hence the confusing phone calls to my home QTH. All in all I was without the radio for only eight hours.

Thought for the day: Let's put our callsigns on our equipment!

ar

QSLs from the WIA Collection

Ken Matchett VK3TL
 Honorary Curator WIA QSL Collection
 4 Sunrlee Hill Road, Montrose VIC 3765
 Tel: 03 9728 6360

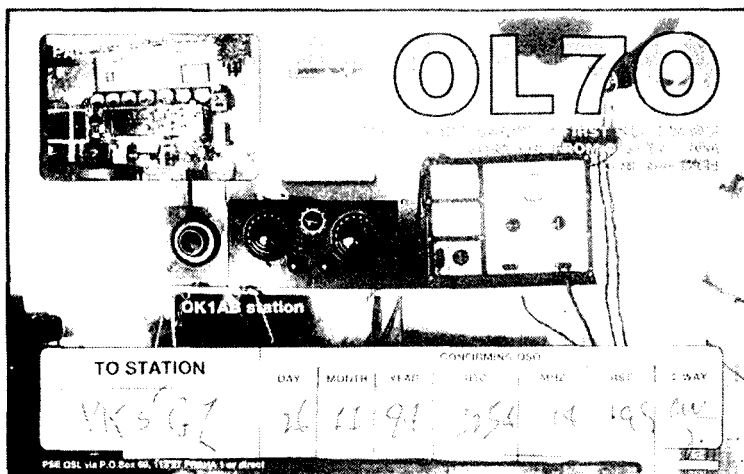
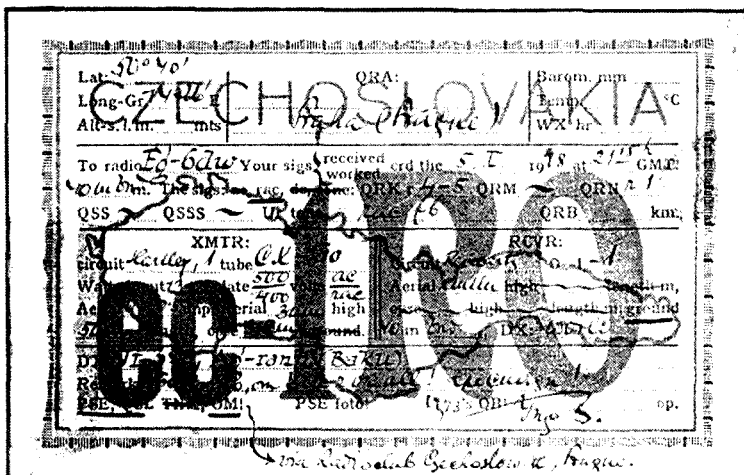
Old and New Czechoslovakian Call-Signs ec-1RO and OL7O

The oldest pre-war Czechoslovakian QSL held by the WIA National Collection is ec-1RO, a particularly rare card sent from Praha (Prague) on 5 January 1928. The transmitter used was the popular Hartley oscillator, plate voltage being 500 V AC, or 400 V RAC operating on the 3.5 MHz band. The report was to an English station Eg-6dw. The receiver was the almost universal Reinartz, using one stage of audio amplification.

The QSL shown, OL7O from the Czech Republic, celebrated the first short-wave contact from Czechoslovakia on 30 November 1924. The uncommon OL prefix was selected by the Czech Republic authorities from the prefix block OKA - OMZ, but is not a unique allocation. In fact, the OL prefix has been used on numerous occasions to celebrate a particular event and is also used in the call-sign OLIHQ of the HQ station of the Czech Radio Club. It has also been used by Novice licensees.

In November 1924 amateur radio operators were not using the OK prefix. This was not officially sanctioned until January 1929. On 1 February 1927 a new system of amateur call signs called intermediates was introduced. The call-signs ec-1RO and Eg-6dw are examples of such intermediates, the first letter indicating the continent (in both these cases, Europe) and the second letter the identifying prefix. Thus ec stood for Czechoslovakia, and Eg for Great Britain. Incidentally, Australia was using at that time the prefix OA (O = Oceania, A = Australia) and the USA, NU (N = North America, U = USA).

The OL7O QSL shows two Czechoslovakian call-signs, OK1-OCA and OK1AB. For reasons given above these could not have been amateur stations. In the early 1920s the Bureau International de l'Union Telegraphique of Berne had allocated the prefix block OKA to OKZ to Czechoslovakia. At the same time the block VHA - VKZ was allotted to Australia. These allocations were promulgated through the Official Year Book of Wireless Telegraphy and Telephony 1923. Experimental radio stations (later to be known as amateur radio stations) had to wait several years before they received a similar call-sign allocation, the early OK prefix being confined to aeronautical, ship and (commercial) land stations.



Thanks

The Federal Body of the WIA would like to thank the friends and relatives of the following "Silent Keys" for their kind donation of QSL cards towards the collection: Hans Ruckert VK2AOU, courtesy of Stewart VK3ESD; Percy Sebire VK3MX, courtesy of Alan VK3AUC; and Bob Wilson, courtesy of Andy VK3SD.

**Support the WIA in order to protect
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Sally Grattidge VK4SHE

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YL DX Net and Other News

(from June VK4SJ)

This net is on a Monday, starting at 05.30z on 14222 kHz with Dave ZLIAMN as net controller. Those present on Monday, 16 March, were Elizabeth VE7YL from Vancouver, Marcia N6DLL from near San Francisco, and Len KH0AC on Saipan, all with very good signals. They were later joined by Peter VK7PR, OM of Helene VK7HD. The ZL girls, Dawn ZL2AGX and Sharon ZL3AE, also had excellent signals, a sign that propagation seems to be picking up. All the VK girls had excellent signals as well as Gwen, Bev, Dot, etc. June works the net with a G5RV and was able to have a QSO with everyone.

June and OM Doug VK4BP have a Bichon Frize (it's a dog, but you knew that didn't you?) called Beau, much loved in spite of chewing up both of Doug's hearing aids one eventful day last year. If you are on e-mail, June can send you a coloured photograph of Beau (this 'super highway' thing is SO clever!).

More DX

(from Gwen VK3DYL)

Raija SM0HNV planned a trip to New Zealand for an organised run in the Bay of Plenty area. She hoped to meet up with Celia, Biny and others in the Auckland area before having a look round the South Island. Biny ZL2AZY and OM Merv have been holidaying in China.

YLS who used to be on the 222YL Net about 10 years ago will probably remember Annabel KX6AZ and AH9AD, who used to call in from various Pacific Islands. She is now in charge of public health on Belau (West Carolines) and will try to get back on the Net when she can.

Another YL frequently heard on 20 m nowadays is Mamtaz S21J. It is good to know of an active YL from Bangladesh. June "worked" her one night but it was hard going.

Iris Colvin W6QL became a Silent Key on 18 February last. Iris, with her late husband

Lloyd, had operated from more than 100 rare DXCC countries over the years and had given thousands of amateurs a new "YL country".

Those interested in collecting YL countries should be looking for the two YLS participating in the Mongolian operation JT1Y from 7 to 14 April.

ALARA Web Page

Have you seen it yet? The latest address was <http://www.hotkey.net.au/~dbishop/alara> (disregard the address in last month's *Amateur Radio*). More changes are on the way so, if you are not successful, watch this space for updates. Be patient, gentle readers, it may not happen overnight, but it WILL happen. Thanks to Dot VK2DDB, and son Peter for putting this page together.

Surfing

(with Dot VK2DDB)

Dot has found <http://www.klever.net.au> and it has an amateur radio page. She is going to see if she can put some Australian stuff on it.

Dot had a contact with Sharron ZL3AE and conditions were very good. Also Marcia K6DLL came in loud and clear. She cooked a St Patrick's Day dinner for her family over the weekend. Boiled mutton, boiled potatoes and boiled cabbage (sounds more authentic than green mashed potato). Dot has been working casually at a long day care centre, on call. Recently, with a tummy bug going around, she was called frequently when teachers were away. Then Dot caught the bug too. She ended up three kilos lighter, but does not recommend it as a way to lose weight.

Lighthouse/Lightship Activity Weekend 1998

(from Dot VK2DDB)

A long list of stations have indicated they will be joining the Lighthouse/Lightship Activity Weekend from 0001 UTC on Saturday, 22 August until 2359 UTC on Sunday, 23 August 1998.

Listen for a lighthouse operating from Svaldbard for the YL meeting. If you are thinking of going there, but worrying about being too cold, the days are in the mid 30s, nights are 10-12 (however, is that degrees C or F?). Gwen will be there (with fur boots on).

1999 YLRL Convention

(from Martha Barron KA6TYO)

The YLRL Convention will be held on 30 and 31 July 1999 on the Queen Mary in Long Beach, Southern California. The Meet is hosted by the Ladies Amateur Radio Association of Orange County, assisted by the YL Radio Club of Los Angeles.

The luxurious ocean liner, Queen Mary, is now a hotel with 365 staterooms and all the

latest amenities. There is much to see on board including guided tours of the ship, historic videos, a gallery of art deco treasures and an array of colourful shops and restaurants. You can operate W6RO from the historic wireless room and museum, so bring your licence. A free bus is available to take you shopping, to restaurants and to visit the new Aquarium.

Costs are comparable with staying on shore: \$79 to \$104 (think these are US dollars) single or double plus 12% occupancy tax. \$15 adds a rollaway bed for a third person. If more than three wish to share, a suite is over \$300, so two rooms would be a better deal. Attendees are responsible for booking rooms with payment direct to the Queen Mary. When booking, be sure to tell them you are with the YLRL Convention to get these rates which are available two days before and after, ie 28 July to 2 August.

OMs and friends are welcome, and side trips will be planned as required. Start planning now.

ar

Could I Have a Taxi from Broadway, Sydney, Australia to Brooklyn New York?

This might seem like a very strange request, but for some time now New York City taxis have been known to frequent the 10 metre band in the course of their business. However, we are pleased to report that due to the hard work of the FCC along with the NYC taxi industry, and Limousine Commission, the problem is going away.

Our correspondent tells us that taxis are being inspected at their inspection facility and the guilty drivers have been warned in person plus receiving a follow-up letter which says any recurrence would result in a possible fine of \$US5,000.

Is that the end of the matter? No, as a criminal investigation is now underway to find the source of the modifiers of the radios.

The final advice given amateur radio operators is 'use the band' and if you find a CBER or illegal user on your frequencies, call CQ and hold a QSO. (Thanks to Richard Murnane VK2SKY for passing on that item to WIA News.) ar

AWARDS

John Kelleher VK3DP

Federal Awards Officer
4 Brook Crescent, Box Hill South, VIC 3128
Tel: 03 9889 8383

Australian DXCC Countries List

I have compiled and updated this WIA Australian DXCC Countries List which is effective as from 31 March 1998. In response to a number of requests, I have marked all those countries which have an active QSL Bureau with a Q.

Q indicates an active QSL Bureau

Prefix	Country
1A0	Sov Mil Order of Malta
IS 9M0	Spraty Islands
3A	Q Monaco
3B6/7	Q Agalega & St Brandon
3B8	Q Mauritius
3B9	Rodriguez Island
3C	Equatorial Guinea
3C0	Pagalu Island
3D2	Q Fiji
3D2	Conway Reef
3D2	Rotuma Island
3DA	Q Swaziland
3V	Tunisia
3W/XV	Vietnam
3X	Guinea
3Y	Bouvet Island
3Y	Peter I Island
4J/K	Azerbaijan
4L	Georgia
4P-S	Q Sri Lanka
4U11TU	Q ITU Geneva
4U1UN	Q HQ United Nations
4X-Z	Q Israel
5A	Libya
5B-P3	Q Cyprus
5H-I	Q Tanzania
5N-O	Q Nigeria
5R-S	Madagascar
5T	Mauritania
5U	Niger
5V	Togo
5W	Q Western Samoa
5X	Q Uganda
5Y-Z	Q Kenya
6V-W	Q Senegal
6Y	Q Jamaica
7O	Yemen

7P	Q Lesotho	EK	Armenia
7Q	Malawi	EL 5L-M	Q Liberia
7T-Y	Q Algeria	EP-Q	Iran
8P	Q Barbados	ER	Q Moldova
8Q	Maldives	ES	Q Estonia
8R	Q Guyana	ET	Q Ethiopia
9A	Q Croatia	EU-W	Q Belarus
9G	Q Ghana	EX	Q Kirghizstan
9H	Q Malta	EY	Q Tajikistan
9I-J	Q Zambia	EZ	Q Turkmenistan
9K	Q Kuwait	F HW-Y	
9L	Q Sierra Leone	TK-TR	Q France
9M2-4	Q West Malaysia	FG	Guadeloupe
9M6-8	East Malaysia	FJ/FS	St Martin
9N	Nepal	FH	Mayotte
9Q-T	Zaire	FK	Q New Caledonia
9U	Burundi	FM	Martinique
9V	Q Singapore	FO	Fr Polynesia
9X	Rwanda	FO0	Clipperton Isl
9Y-Z	Q Trinidad & Tobago	FP	St Pierre & Miquelon
A2-8O	Q Botswana	FR	Reunion Isl
A3	Q Tonga	FR/G	Glorioso Isl
A4	Q Oman	FR/J E	Juan de Nova, Europa
A5	Bhutan	FR/T	Tromelin Isl
A6	United Arab Emirates	FT8W	Crozet Isl
A7	Q Qatar	FT8X	Kerguelen Isl
A9	Q Bahrain	FT8Z	Amsterdam & St Paul Isl
AP-S	Q Pakistan	FW	Wallis & Futuna Isl
BS	Scarborough Reef	FY	French Guiana
BV	Q Taiwan	G-GX	
BV9	Pratas Island	2A-2Z	Q England
BA-Z	Q China	GD-GT	Q Isle of Man
C2	Nauru	GI-GN	Q North Ireland
C3	Q Andorra	GJ-GH	Q Jersey
C5	Q The Gambia	GM-GS	Q Scotland
C6	Q Bahamas	GU-GP	Q Guernsey
C8-9	Q Mozambique	GW-GC	Q Wales
CA-E		H4	Q Solomon Isls
XQ-R	Q Chile	H40	Tuamotu Isl
CE9/KC4	Antarctica	HA-HG	Q Hungary
CE0	Easter Island	HB-HE	Q Switzerland
CE0	Juan Fernandez Isl	HB0	Q Liechtenstein
CE0	San Felix Isl	HC-HD	Q Ecuador
CM-O T4	Q Cuba	HC-HD8	Galapagos Isls
CN	Q Morocco	HH 4V	Q Haiti
CP	Q Bolivia	HI	Q Dominican Republic
CQ-U	Q Portugal	HJ-K 5J-K	Q Columbia
CT3	Madeira Isl	HK0	Malpelo Isl
CU	Azores Isls	HK0	San Andres Isl
CV-X	Q Uruguay	HL D5	Q Sth Korea
CY9	St Paul Isl	HO-P	Q Panama
CY0	Sable Island	HQ-R	Q Honduras
D2-3	Angola	HS E2	Q Thailand
D4	Cape Verde Isl	HV	The Vatican
D6	The Comoros	HZ	Saudi Arabia
DA-R	Q Germany	I IT	Q Italy
DU-Z		IM-IS	Sardinia
4D-I	Q Philippines	J2	Q Djibouti
E3	Eritrea	J3	Q Grenada
EA-AM-O	Q Spain	J5	Guinea-Bissau
EA6-EH6	Balearic Isl	J6	St Lucia
EA8-EH8	Canary Isls	J7	Q Dominica
EA9-EH9	Ceuta & Melilla	J8	St Vincent
EI-J	Q Ireland		

JA-S 7J-N		SA-SM	Q	Sweden	VP9	Q	Bermuda
8J-8N	Q	SN-SR HF			VQ9	Q	Chagos Isl
JD1 7J1		3Z	Q	Poland	VR6		Pitcairn Isl
JD1 7J1		ST 6T-U	Q	Sudan	VS6/VR2-9	Q	Hong Kong
JT-V	Q	SU	Q	Egypt	VT-VW	Q	India
JW		SV-Z J4	Q	Greece	VU4		Andaman Isl
JX		SV5		Dodecanese	VU7		Laccadive Isl
JY	Q	SV9		Crete	XA-I 4A-C		
K-W-N-A	Q	SV/A		Mt Athos	6D-6J	Q	Mexico
KC6		T2		Tuvalu Is	XA-XI4		Revilla Gigedo
KG4	Q	T30		Kiribati (West)	XT	Q	Birkina Fasso
KH1		T31		Kiribati (Central)	XU		Kampuchea
KH2	Q	T32		Kiribati (East)	XW		Laos
KH3	Q	T33		Banaba Isl	XX9		Macao
KH4	Q	T5 6O		Somalia	XY-Z		Myanmar
KH5		T7	Q	San Marino	YA		Afghanistan
KH5K		T9	Q	Bosnia & Herzegovina	YB-H 8A-I	Q	Indonesia
KH6/7	Q	TA-C YM	Q	Turkey	YI HN	Q	Iraq
KH7		TF	Q	Iceland	YJ	Q	Vanuatu
KH8		TG-TD	Q	Guatemala	YK 6C	Q	Syria
KH9		TI-TE	Q	Costa Rica	YL	Q	Latvia
KH0		TI9		Cocos Isl	YN HT	Q	Nicaragua
KL7	Q	TJ		Cameroon	YO-R	Q	Romania
KP1		TK		Corsica	YS	Q	El Salvador
KP2	Q	TL		Central Afr Republic	YT-Z 4N-O	Q	Yugoslavia
KP3-4	Q	TN		Congo	YV-YY	Q	Venezuela
KP5		TR	Q	Gabon	YV0		Aves Island
LA-LN	Q	TT		Chad	Z2		Zimbabwe
LO-LW		TU	Q	Ivory Coast	Z3 4N5	Q	Macedonia
AY-Z L2-9	Q	TY		Benin	ZA	Q	Albania
LX	Q	TZ	Q	Mali	ZB2	Q	Gibraltar
LY	Q	UA2F		Kaliningrad	ZC4	Q	UK bases on Cyprus
LZ	Q	UA9-0		Asiatic Russia	ZD7		St Helena Isl
OA-OC 4T	Q	UJ-UM	Q	Uzbekistan	ZD8	Q	Ascension Isl
OD	Q	UN-UQ	Q	Kazakhstan	ZD9		Tristan da Cunha
OE	Q	UR-Z EM-O	Q	Ukraine	ZF	Q	Cayman Isls
OF-OI	Q	V2	Q	Antigua & Barbuda	ZK1		North Cook Isls
OH0		V3	Q	Belize	ZK1		South Cook Isls
OJ0		V4		St Kitts & Nevis	ZK2		Niue Isl
OK-OL	Q	V5	Q	Namibia	ZK3		Tokelau Isl
OM	Q	V6		Micronesia	ZL-M	Q	New Zealand
ON-OT	Q	V7	Q	Marshall Isls	ZL7		Chatham Island
OX XP		V8	Q	Brunei	ZL8		Kermadec Isl
OY	Q	VA-G VO			ZL9		Auckland & Campbell Isls
OU-OZ	Q	VX-Y CF-K			ZP	Q	Paraguay
P2	Q	CY-Z XJ-O	Q	Canada	ZR-ZU	Q	South Africa
P4	Q	VK	Q	Australia	ZR2-ZU8		Prince Edward & Marion Isls
P5		VK0		Heard Isl			
PA-PI	Q	VK0		Macquarie Isl			
PJ2,4,9	Q	VK9C		Cocos-Keeling Isl			
PJ5-8		VK9L		Lord Howe Isl			
PP-Y ZV-Z	Q	VK9M		Mellish Reef			
PY0		VK9N		Norfolk Isl			
PY0		VK9W		Willis Isl			
PY0		VK9X		Christmas Isl			
PZ	Q	VP2E	Q	Anguilla			
R UA-I	Q	VP2M	Q	Montserrat			
RIFJ		VP2V	Q	Brit Virgin Isls			
RIMV		VP5	Q	Turks & Caicos Isls			
S2-3	Q	VP8	Q	Falkland Isls			
S5	Q	VP8 LU		South Georgia Isl			
S7		VP8 LU		South Orkney Isl			
S9		VP8 LU		South Sandwich Isl			
S0		VP8 LU 4K1		South Shetland Isl			

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Contests

Peter Nesbit VK3APN

Federal Contests Co-ordinator
PO Box 2175, Caulfield Junction VIC 3161
E-mail: pnesbit@melbpc.org.au

A Welcome to Our New Federal Contest Co-ordinator

After six very enjoyable years as FCC, I feel it is time to hand over to someone else. I would like to welcome Ian VK3DID to the position. Ian will be taking over this column and all associated duties from next month. My thanks to all those who have helped over the years by managing our contests, and those who have sent information for this column, or written just to say hello. There are still a few loose ends to be tied up, so for those who are waiting for something from me, please be patient as it will be attended to over the coming weeks.

For information and assistance this month, many thanks to VK2BQS, VK2SRM, VK3DID, VK3KWA, LZ1BJ, OE4BKU, ARRL, JARL, RSGB, and *Antenna Electronica* magazine. See you on air!
73, Peter VK3APN

IARU Region 1 Field Day

1500z Sat to 1500z Sun 6/7 June

Expect plenty of European activity in this CW contest, which is a collection of regional field days. The rules depend on the sponsoring society but, in general, you send RST + serial, and score four points per QSO with each portable European station. The multiplier is the number of European countries worked. Logs can go to: RSGB (G3UFY), 77 Bensham Manor Road, Thornton Heath, Surrey CR7 7AF, England, postmarked within 30 days of the contest.

Portugal Day Contest (SSB)

0700-2400z, Sunday 7 June

This contest takes place on the first Sunday in June each year. Use 80-10 m, SSB only. Send RS + serial number. CT stations will send RS + district code. Score two points per QSO with CT1-4 or EA1-5 & 7, one point per QSO with other countries, and zero for own country. Multipliers are the number of CT districts, plus DXCC countries, plus number of continents worked irrespective of band. Districts are

Contest Calendar May - July 98

May 2/3	ARI DX Contest (CW/SSB/RTTY)	(Apr 98)
May 9/10	CQ-M DX Contest (CW/Phone/Mixed)	(Apr 98)
May 16/17	Sangster Shield Contest (CW)	(Apr 98)
May 30/31	CQ WPX Contest (CW)	(Feb 98)
Jun 6/7	IARU Region 1 Field Day (CW)	
Jun 7	Portugal Day Contest (SSB)	
Jun 13	QRP Day Contest (CW)	
Jun 13	Asia-Pacific Sprint (SSB)	(Jan 98)
Jun 13/14	ANARTS RTTY Contest	
Jun 13/14	Top of Europe Grid Contest (SSB)	
Jun 13/14	South America WW Contest (CW)	
Jun 20/21	VK Novice Contest	
Jun 20/21	All Asia DX Contest (CW)	
Jun 27/28	ARRL Field Day	
Jul 1	Canada Day CW/Phone	
Jul 4	Australasian CW Sprint (80 m)	
Jul 4	Jack Files Memorial Contest (CW)	
Jul 4	NZART Memorial Contest	
Jul 11	Australasian Phone Sprint (80 m)	
Jul 11/12	IARU HF Championship	
Jul 18	South Pacific 160 m Contest	
Jul 18	Colombian DX Contest (Phone/CW)	
Jul 25/26	RSGB IOTA Contest	

AV, BG, BJ, BR, CB, CO, EV, FR, GD, LR, LX, PG, PT, SR, ST, VC, VR, and VS. Send logs to: REP Contest Manager/DP91, Apartado 2483, 1112 Lisboa, Codex, Portugal by 30 June.

1997 QRP Day Contest

Saturday 13 June, 0600-1200z

Sponsored by the CW Operators' QRP Club, the object is to work as many local and overseas stations as possible. Stations from any country may enter, and contacts with any country count for scoring purposes. Sections are (i) VK, ZL, P2, and (ii) outside these call areas.

Use CW in the normally recognised CW sections of 160-10 m (no WARC bands). The recognised QRP calling frequencies are: 1815, 3530, 7030, 14060, 21060, and 28060 (then QSY to a working frequency). Exchange RST + serial number starting at 001. Repeat QSOs are allowed between the same stations, on the same band, with at least two hours between subsequent QSOs.

QRP stations must not exceed five watts carrier power to the antenna, and should add /QRP after their callsign.

Stations within VK/ZL/P2 score one point per VK/ZL/P2 QSO, and three points per QSO outside this area. Stations outside VK/ZL/P2 score three points per VK/ZL/P2 QSO, and one point per QSO outside this area. All contacts made with a homebrew transmitter or transceiver score double points.

The final score is the sum of the total QSO points. Apart from the use of homebrew

equipment (see above), no multipliers apply. Include full details of the equipment used, and send your logs to: Ron Everingham VK4EV, 30 Hunter Street, Everton Park, Queensland 4053 by the second Saturday of July (1998 = 11th).

Certificates will be awarded to the first three place-getters in each section, and the top scorer on each band, if the entrant is not already a place-getter. Those interested in joining the CW Operators' QRP Club should write to: Kevin Zietz VK5AKZ, 41 Tobruk Ave, St Mary's, SA 5042.

ANARTS WW DX RTTY Contest

0000z Sat to 2400z Sun, 13/14 June

This contest is organised by the Australian National Amateur Radio Teleprinter Society,

**Have you advised
your WIA
Membership
Secretary of your
new callsign?**

**Use the form on
the reverse of the
Amateur Radio
address flysheet.**

YOUR ONE STOP COMMUNICATION SHOP

FT-50RD 2m/70cm Handheld

The Yaesu FT-50RD is an amazingly compact 2m/70cm Amateur band handheld transceiver which provides MIL-STD 810 shock and vibration resistance, super wideband receiver coverage, simple menu settings for most functions, and compatibility with the optional Yaesu ADMS-ID software/interface package for PC programming of many functions.

Other features include:

- Tx 144-148MHz, 430 - 450MHz
- Rx 76-200, 300 - 540, 590 - 999MHz (cellular blocked)
- New FTT-12 keypad provides Digital Voice Recording, DTMF paging, CTCSS/DCS scanning, and CTCSS encode/decode
- 2m/70cm RF output: 2.5, 1.0, 0.1W standard, up to 5W with 9.6V battery or adaptor
- "Omni-glow" LCD screen for easier night-time viewing
- 112 memory channels with 4 character alpha-numeric naming

- High speed scanning, 12V DC socket, Digital Code Squelch
- Dual watch allows monitoring of sub-band activity
- Direct FM modulation for better audio quality
- 5 battery saving systems (includes Rx and Tx Save, and Auto Off)
- Rear panel clamshell battery pack
- Comes with FNB-40 slimline 6V 650mA/H Nicad battery pack, flexible 2m/70cm antenna and modified M-9626 AC plugpack adaptor for Nicad charging

D 3660

2 YEAR WARRANTY

\$ 569



FT-8100R 2m/70cm Mobile

The stunning Yaesu FT-8100R is a state of the art 2m/70cm band mobile transceiver that combines high power and the industry's most versatile memory system with an excellent wideband receiver and solid construction.

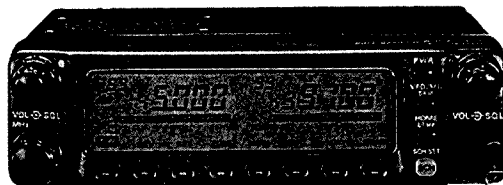
It's MIL-STD-810 shock and vibration rating is your assurance of years of reliable operation. Other features include:

- Rear panel socket for 1200 and 9600 baud packet operation
- 3 selectable power output levels per band
- Inbuilt antenna duplexer for immediate dualband antenna use
- 198 memory channels for storage of your favourite frequencies, plus 4 "band limit" memories per band
- Dual receive capability - VHF/UHF, VHF/VHF,UHF/UHF
- Huge "Omni-glow" backlit screen showing frequency, memory and function activity
- Enhanced "Smart Search" for auto searching and loading of active frequencies into 51 special memories per band
- Inbuilt crossband repeater facility
- CTCSS encoder for repeater access where sub-audible tones are required
- Wide range of tuning steps with different settings for each band
- With handheld microphone, mounting bracket and fused DC power cord.

D 3314

2 YEAR WARRANTY

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Specifications

Frequency coverage: Transmit: 144 to 148MHz, 430 to 450MHz

Receive: 110 to 550MHz, 750 to 1330MHz*
*(800MHz cellular locked out)

Transmit power: 2m - 50, 20 and 5W;

70cm - 35, 20 and 5W

Size: 140 x 40 x 152mm without knobs

Supplied accessories

- MH-42B6j handheld microphone
- MMB-36 mobile mounting bracket
- Fused DC power cord

Optional accessories

D 3313 YSK-8100 Separation Kit

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That's where you go

B 3332

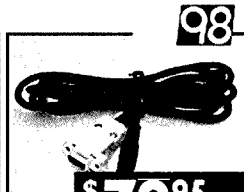
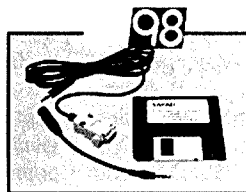
COMMUNICATE MORE CLEARLY WITH THESE

Advanced Data Management Software

An advanced way to program many of the functions on Yaesu handheld and mobile transceivers. Each package consists of an interface that plugs into the serial port of a PC and connects to the transceiver via its microphone socket (for hand-helds) or its Packet socket (for mobiles). Also provides easy-to-use 3.5" PC software with pull down menus that allow for programming and naming of memory channels, selection of output power, CTCSS tones, scan and battery saver operation, plus much more.

ADMS-1D suits FT-10, 11R, 50R/RD, 51R, VX-1R D-3753

ADMS-2D suits FT-3000M, 8000R, 8500, 8100R D-3759



\$79⁹⁵ ea

2m 30W RF Power Amplifier

Ideal for use at home or in the car. It works with inputs from 0.5 to 5W, and produces up to 30W output with just 3W input. A switchable 12dB gain low noise GaAs FET receiver pre-amp is included for use in quiet RF areas. The amplifier includes a large heatsink, fused DC power lead, SO-239 input/output connectors, and simple LED metering for DC supply voltage and relative RF output power. Frequency range 144-148MHz FM only. Requires 13.8V DC at 6A max. Size: 125 x 48 x 147mm (WHD) including protrusions.

D 2515

\$99⁹⁵

250-Watt Dummy Load



\$199

Ideal for testing high power transceivers and amplifiers, the Revex L250N 50 ohm dummy load is rated at 250W (50% duty cycle) and 1kW peak power. Its internal construction and low-loss N-type socket allow use over the DC-500MHz range with very low SWR. Includes desk stands for more efficient convection cooling.

Made in Japan. D 7028

Yaesu FT-900 Deluxe HF Mobile

The Yaesu FT-900 is a truly practical 100W HF mobile transceiver that does not compromise performance when used in base station installations. For convenient mobile operation, a lightweight front sub-panel with access to commonly used controls can be mounted away from the transceiver's body using an optional kit. The large "Omni-Glow" backlit LCD screen provides high visibility over wide viewing angles, while the voice and data between the sub-panel and the transceiver are digital to prevent RF feedback or noise pick-up problems. A tough diecast top panel/heatsink and duct-flow cooling system allows extended transmission periods while still allowing the optional ATU-2 auto antenna tuner to be mounted inside the transceiver.

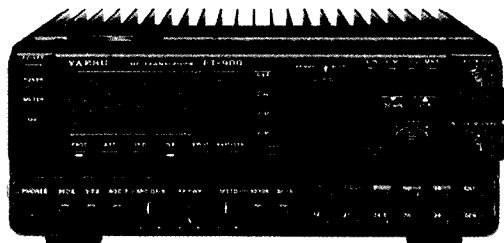
D 3280 **2 YEAR WARRANTY**

\$1895

BONUS

Half priced ATU-2 auto antenna tuner when purchased with your FT-900

SAVE \$249



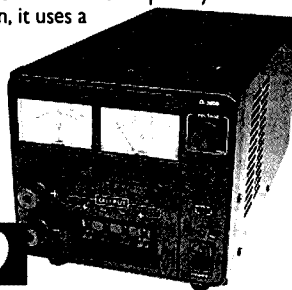
3-15V 25 Heavy Duty Power Supply

This solidly built power supply provides up to 25 amps ICAS at 15V, 20 amps continuous at 13.8V and lower current at lower voltages. It has front panel metering, plus high current banana-style and low-current output connections. An internal heatsink and thermally-switched fan provides cooling without protrusions in the metal case. Specially modified for reliable long-term operation, it uses a rugged 50 amp bridge rectifier & trifilar transformer. Also provided is extensive overload protection through dissipation limiting circuitry for the pass transistors, a 30 Amp instantaneous current limit, AC mains circuit breaker, a transformer thermal fuse and fused auxiliary secondary winding.

D 3800

GREAT VALUE!

\$299



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Stores across Australia and New Zealand

For the location of your nearest store call 1800 26 3922

and runs on the second full weekend of June each year. The object is to contact as many stations locally and overseas as possible on 80/40/20/15/10 m, using any digital mode (RTTY, AMTOR, FEC, PKT, PACTOR, etc - no satellite).

Categories are single operator, multi-operator single transmitter, and SWL. Max operating time for single operators only is 30 hours. Rest periods can be taken at any time during the contest. Mark rest periods in log.

Messages comprise RST, UTC time, and CQ Zone. For each valid QSO, points are claimed according to zone. Space precludes publishing a complete points table, however the following extracts show the points claimable by entrants in zones 28, 29, and 30.

The numbers show the number of points for QSOs with zones 1 to 40, working left to right, top to bottom (ie the first number shows the points per QSO with zone 1, 2nd with zone 2, etc):

Your Zone = 28

31 40 40 44 45 49 53 51 55 54
49 48 46 32 30 26 22 20 20 25
20 11 14 10 15 05 07 02 10 17
31 24 34 25 36 30 22 26 19 34

Your Zone = 29

39 50 43 52 54 47 49 54 52 44
42 37 37 42 39 36 32 30 30 34
28 21 24 20 23 16 15 10 02 09
15 32 42 33 39 31 24 24 20 44

Your Zone = 30

35 50 35 44 46 38 40 44 45 37
41 33 34 49 47 42 38 35 32 43
37 29 30 24 30 22 18 17 09 02
24 07 51 42 47 40 33 32 29 48

Countries are as per the ARRL DXCC list, except that each call area in mainland VK (1-8), VE, JA and W counts as a separate country. Mainland VK, VE, JA and W are not claimable. Call areas outside these mainland areas (eg VK0, JD1, KL7, KC4) count as separate countries. One's own

multiplier (country or call area) can be worked for QSO points, but not for a multiplier.

Points are determined for each band, using the relevant points table, and then added. *Note: QSOs with VK2SG earn double points.* Countries are similarly tallied. Continents are those worked irrespective of the band.

Total score is: points x countries x continents. Non-VKs should add a "VK Bonus" to their points tally, which is 500 points for each VK worked on 80 m, 400 points on 40 m, 100 points on 20 m, 200 points on 15 m, and 300 points on 10 m.

Use a separate log for each band. Logs must show: date, time, callsign of station worked/heard, messages sent and received, and points.

The summary sheet must show: callsign, name and address, bands used, the points claimed for each band, the number of countries worked on each band, the number of continents worked, VK Bonus calculations for world stations, calculations, and declaration.

Multi-op entries must show the signatures and callsigns of each operator, and single-op entries must show a summary of operating times. Please include a dupe sheet for any band log over 75 QSOs.

Send log and summary sheet to: ANARTS Contest Manager, PO Box 93, Toongabbie, NSW 2146 by 1 September of the year of the contest. If required, a full page scoring table (last revised 1994), and log and summary sheets are available from ANARTS or myself upon receipt of a SASE.

Plaques and certificates will be awarded to the winners.

Top Of Europe (TOEC) WW Grid Contest

1200z Sat to 1200z Sun, 13/14 June

This contest is confirmed for 1998, but no further details are to hand.

South American World Wide CW

1200z Sat to 1800z Sun, 13/14 June

This contest is sponsored by the Brazilian magazine *Antenna Electronica Popular*, and occurs on each second full weekend in June. The objective is to work as many South American amateurs as possible, plus other areas. Bands are 80-10 m, and categories are: single operator, single and all band; multi-operator, single and all band; and QRP all band (max 10 W IP). Exchange RST and continent (Oceania = OC). QRP stations add /QRP.

Claim 10 points for each QSO with a South American station (WAC boundaries), and two points for all others. Multipliers are the total number of South American prefixes worked. Calculate the band score (band points x band multiplier), and add the band scores together to get the final score. Use separate logs for each band, and send to: WWSA Contest, PO Box 282, ZIP 20001-970 Rio de Janeiro, RJ - Brazil, to arrive by 30 October. A number of special prefixes will be activated during the contest, and various awards are offered.

1998 WIA VK Novice Contest

0800z Sat to 0800z Sun, 20/21 June

Presented by **Ray Milliken, VK2SRM**

The object of this contest is to encourage amateur operation in VK, ZL and P2, and to promote contacts with Novice and club stations. Only stations in VK, ZL and P2 are eligible to participate. Stations in the same call area may contact each other for contest credit.

All operation must be confined to the Novice frequency allocations in the 10, 15 and 80 m bands, viz 3.525-3.625 MHz, 21.125-21.300 MHz and 28.100-28.600 MHz. No cross-band operation is permitted.

Sections include (a) Phone (Novice/Full call); (b) CW (Novice/Full call); (c) SWL. Except for club stations, no multi-operator operation is allowed.

Phone stations should call "CQ Novice Contest", and CW stations "CQ N". Club stations should call "CQ Novice Contest, Club Station", followed by the callsign. Exchange a serial number comprising RS (or RST) followed by three figures commencing at 001 for the first contact, and increasing by one for each subsequent contact.

All operators must, after making five consecutive contacts on the one frequency, change frequency by at least 5 kHz for phone and 2 kHz for CW (stations using crystal controlled transmitters are exempt from this rule). This rule is restricted to the 80 m band, and for the first six hours of the contest.

Stations may be contacted twice per band, providing at least 12 hours has passed since the previous contact with that station.

WIA MORSE PRACTICE TRANSMISSIONS

VK2BWI	Nightly at 2000 local on 3550 kHz
VK2RCW	Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm
VK3COD	Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz
VK3RCW	Continuous on 145.650 MHz, 5 wpm, 10 wpm
VK4WIT	Monday at 0930 UTC on 3535 kHz
VK4WCH	Wednesday at 1000 UTC on 3535 kHz
VK4AV	Thursday at 0930 UTC on 3535 kHz
VK4WIS	Sunday at 0930 UTC on 3535 kHz
VK5AWI	Nightly at 2030 local on 3550 kHz
VK5VF	Continuous on 145.650 MHz, 5 wpm to 12 wpm
VK6RCW	Continuous on 147.375 MHz, 3 wpm to 12 wpm

SWLs may log up to ten sequential contacts made by a station, and must then log at least five other stations before logging the previous station again. The five stations so logged need a minimum of one contact only logged.

Score five points for contacts with Novice or Combined call stations, ten points for contacts with club stations, and two points for contacts with Full call stations. SWLs score five points for Novice to Novice contacts, two points for Novice to Full call or Full call to Full call contacts, and ten points for contacts made by a radio club.

Logs must show: Date/time UTC, Band, Mode, Station contacted, Report and serial number sent, Report and serial number received, Points. Each log sheet must be headed "VK Novice Contest 1997". The total claimed score for each page must be shown on the bottom of the page.

Logs must be accompanied by a summary sheet showing: callsign, name, mailing address, section entered, number of valid contacts, and claimed score. The summary sheet must include the following declaration: "I hereby certify that this station was operated in accordance with the rules and spirit of the contest". The sheet must be signed and dated by the operator or, in the case of a club station, by a responsible officer of the committee, or a licensed operator delegated by the committee to do so.

Entrants may submit only one contest log per mode. Logs for entries where an entrant uses more than one callsign whilst operating in the contest will not be accepted. Send entries to: Novice Contest Manager, Westlakes ARC, Box 1, Teralba, NSW 2284, to arrive by Friday, 17 July 1998.

The Keith Howard VK2AKX Trophy will be awarded to the Novice entrant with the highest phone score, and the Clive Burns Memorial Trophy to the Novice entrant with the highest CW score (these are perpetual trophies on permanent display at the Executive Office).

In each case, the annual winner will receive a suitably inscribed wall plaque as permanent recognition. Certificates will also be awarded to the top scoring Novice station in each call area, the top scoring station in each section, and to any other entrant where meritorious operation has been carried out. Awards are at the discretion of the contest manager. A Certificate of Participation will be awarded to all operators who submit a log in the contest.

Manager's note: I would like to thank all those who have supported this contest over the last six years that I have been manager. A new manager will be appointed by the Westlakes ARC to receive the logs for this year.

All Asian DX Contest

CW: 0000z Sat to 2400z Sun, 20/21 June
Phone: 0000z Sat to 2400z Sun, 5/6 September

The object is to contact as many stations in Asia as possible, on 160-10 m (no WARC bands). Classes are single operator, single and multi-band; and multi-operator multi-band. Call "CQ AA" or "CQ Asia". Exchange RS(T) plus two figures denoting your age (YLs send "00"). For each QSO score three points on 160 m, two points on 80 m, and one point on other bands. The multiplier is the number of different Asian prefixes worked per band, according to CQ WPX rules. Example: JS9ABC/7 counts for prefix JS7. Note that JD1 stations on Ogasawara (Bonin and Volcano) Isl belong to Asia, and JD1 stations on Minamitori Shima (Marcus) Isl belong to Oceania. Final score is total QSO points x total multiplier.

Use standard log and summary sheet format, clearly showing new multipliers when first worked. Send logs postmarked by 30 July (CW) and 30 September (SSB) to: JARL, AA

This year's winner is again Adrian Pollock VK2FZ/4 . . .

DX Contest, Box 377, Tokyo Central, Japan. Indicate phone or CW on envelope. Awards include certificates to the top one to five stations in each country on each band (depending on activity), and medals to the continental leaders. For full results please enclose an IRC and SAE with log.

Asian countries are: A4, A5, A6, A7, A9, AP, BV, BY, CR9, EP, HL/HM, HS, HZ/7Z, JA-JS, JD1 (Ogasawara), JT, JY, OD, S2, TA, U/R (CIS), VR2/VS6, VU, VU4, VU7, XU, XV/3W, XW, XZ, YA, YI, YK, ZC4/5B4, IS, 4S, 4X/4Z, 7O, 8Q, 9K, 9M2, 9N, and 9V.

ARRL Field Day

1800z Sat to 2100z Sun, 27/28 June

As with the RSGB Field Day, overseas stations can participate and submit a log, but otherwise are ineligible to compete. Exchange RS(T)+QTH; W/VE will send operating class + ARRL/CRRL section. Send log postmarked by 24 July to: ARRL Field Day Contest, 225 Main St., Newington, CT 06111, USA.

Results of 1997 LZ DX Contest

(call/band/QSOs/pts/mult/score)
VK8AV A 92 336 23 7728
VK4TT 14 72 235 15 3525
VK4ICU 14 22 90 5 450

Results of 1997/98 Ross Hull Memorial Contest

Presented by John Martin, VK3KWA

The 1997/98 Contest was a mixed bag. There were several good tropo openings and some sporadic E on both six and two metres, and a number of very good contacts were made. On the other hand, activity was about the same as last year, and it was quite poor in the second half of the contest.

This is surprising because the level of year-round SSB activity is higher than it was a few years ago. I keep a list of callsigns heard on two metres SSB, and in my call area the number has increased by around one third in the last year. But only a few of the newer stations have been active in chasing DX over the summer. At the same time, a number of stations who used to be mainstays on bands like 2 m have been harder to find, because they tend to spend the DX season experimenting on higher bands.

Speaking of the higher bands: the 1997/98 contest is the first in which every band from 6 m up to 24 GHz was represented in the logs.

Winners

This year's winner is again Adrian Pollock VK2FZ/4, with a very high score on five bands. In second place comes Rob Ashlin VK3DEM, also with a powerfully good score and first place on the 70 cm band.

Third place goes to Phil Helbig VK5AKK, and fourth Wal Howse VK6KZ. Both did extremely well on 2 m and 70 cm, and Wal distinguished himself by being the first entrant to operate on nine bands.

I would like to congratulate Adrian on another excellent win. This will be his last contest for a while because he is dismantling his station to move QTH. Good luck Adrian, and I hope we will hear you back on air soon.

Congratulations also to the other place-getters, and to everyone who sent in a log. The scores don't tell the whole story in themselves, because they have to be weighed against the station location and the number of stations within normal working range. For example, Richard VK6XLR, who did very well considering that he is so far away from the main centres of amateur activity. Each one of this year's logs is something to be proud of.

Next Year

The 6 m scoring will need a close look (as usual). Scores should be based on the difficulty of making the contact, and this means that 6 m scores should not increase linearly with distance as they do on the other bands. Contacts within sporadic E range (say 1200 - 2400 km) should score about the same as local contacts. There should also be a similar "hump" in the scoring curve for multi-hop or TEP contacts.

1997/98 Ross Hull Memorial Contest Individual Listings

Call	50 MHz	144 MHz	432 MHz	1.2 GHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	24 GHz	TOTAL
VK2FZ/4	3903	3644	2422	2570	494	-	-	-	-	13033
VK3DEM	1317	3516	3792	2110	276	320	-	368	-	11699
VK5AKK	1550	3872	3500	70	-	-	-	-	-	8992
VK6KZ	267	4188	2037	170	13	32	48	512	32	7299
VK3CY	-	3108	2730	-	-	-	-	-	-	5838
VK2TWR	83	2396	3003	-	-	-	-	-	-	5482
VK7XR	820	1800	1512	630	-	-	-	-	-	4672
VK2BA	2349	856	-	-	-	-	-	-	-	3295
VK3TBM	46	936	819	200	-	-	-	-	-	2001
VK4KZR	-	1020	161	570	195	-	-	-	-	1946
VK3TLW	3	632	875	400	-	-	-	-	-	1910
VK4IC	110	792	-	-	-	-	-	-	-	902
VK6XLR	780	-	-	-	-	-	-	-	-	780
VK4GWC	22	104	70	100	-	-	-	-	-	296
VK3TMP	Check log									

The duration of the contest is still a subject of debate. For most participants the main attraction is the enhanced activity, and they want it to last for as long as possible. But it is a bugbear for those entrants who wish to get the highest possible score. It is like a marathon run in which the top prizes go to sprinters; and, quite naturally, the sprinters do not like having to run so hard for so long. The contest depends on the support of both groups of entrants, and it isn't easy to reduce the workload for the top competitors without killing activity.

As usual, comments and suggestions are welcome. I can be contacted QTHR or via the WIA Federal Office. Please note that I do not have Internet facilities.

Some Comments From the Logs

For the past five years I've tried to encourage VK7s to get active in the contest, yet I appear to be the only active contestant. The contest needs some category to encourage localised activity... (VK7XR). This is my first contest. I have been an amateur for just over 12 months and operating 50 MHz since December 1997. There is no other 50 MHz operator within 1000 km... (VK6XLR). I disagree with those who claim that six metre operators have the points stacked in their favour. With no multiplier, one has to work a lot of stations to keep up with those in good two metre locations... (VK2BA). From my results, 50 MHz is too prominent and with the approaching sunspot maximum will become even more so. The last ten days were a washout... (VK2FZ/4). I applaud the inclusion of a decent points system for 50 MHz. I was critical of the limit of ten contacts with any one station on any one band... (VK6KZ). I feel the duration of four weeks is too long and it is showing by the number of operators who are not competing... (VK3DEM). ar

Club News

Radio Amateurs Old Timers Club (RAOTC)

The Club's annual meeting and luncheon was held at the Bentleigh Club on Tuesday, 10 March.

73 members and friends attended and appreciated a very interesting talk by Mike Hassett, National Program Manager Communications at the head office of the Bureau of Meteorology in Melbourne.

Committee members elected at the meeting are Alan Cook VK3AUC, Milton Crompton VK3MN, Stewart Day VK3ESD, Allan Doble VK3AMD, Arthur Evans VK3VQ, Ron Fisher VK3OM, John Fullagar VK3AVY and Harry Maugher VK3KAE. Office bearers will be elected at the next committee meeting.

There has been a very gratifying response to the magazine label stickers advising the due date for membership subscriptions. Allan Doble VK3AMD

Summerland Amateur Radio Club

The Summerland Amateur Radio Club is hosting its 9th Computer Expo. The venue is the Lismore (NSW) City Hall on Saturday, 30 May 1998, from 9.30 am to 4.00 pm.

Come along and check out the latest in computer technology, hardware and software.

There should be two Internet sites up and running for you to try.

Tables will be provided for your pre-loved gear, so bring along your surplus and/or grab a bargain. Lucky door prizes and refreshments will be available during the day. Admission will be \$3.00 each, or \$5.00 per family.

For bookings and more information, contact Peter VK2LED on 02 6622 3862, or Graeme VK2GJ on 02 6685 1336.

Why not check out the club Web page at www.nor.com.au/community/sarc/sarc.html. Or leave an e-mail on sarc@nor.com.au. Graeme Virtue VK2GJ ar

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of March:

L30969	MR J LOVELL
VK2BN	MR F B SMITH
VK3ACE	MR K J HASLAM
VK3HCJ	MR N SLEEP
VK3MAD	MR S L ANDERSON
VK3XSW	MR W STIRLING
VK3YSW	MR J O KELLY
VK3ZGP	MR G PAGE
VK7EKA	MR M MILLWARD
VK7KM	MR K E BADCOCK
VK7KPM	MR P J MCCAFFERTY
VK7LJB	MR J BYERS
VK7MBP	MR M A BOWERMAN
VK7OW	MR J G DAVIS

ar

Pounding Brass

Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

Morse Examinations

Sitting for a Morse examination is no different from sitting for the theory test, or any examination, for that matter. The most important aspect of the Morse test is being prepared, being confident but not over confident, and "giving it a go".

The job of the examiner is to see that you can correctly receive and send in plain language, including numbers, the required passage as set down by the examiners. They are there to help you. They are not there to keep you from becoming an amateur, or to make it difficult, or to intimidate you, or to enjoy themselves at your expense. Any questions you might have in respect to the exam, ask them. They will be only too happy to help you.

If you have prepared yourself for the required examination, and can comfortably receive the required text, you should have no trouble in passing the examination, except perhaps for a small case of jitters which is quite normal for some people.

The big day has finally arrived, you're probably thinking to yourself about the coming examination and trying to reassure yourself that everything will be OK. Let's tackle the receiving test first and next month look at the sending test.

I've sat in on some examinations over the years and watched some of the methods used in teaching the receiving test. Two methods are currently being used. They are;

1. Headphones with built in receiver; and
2. Audio Cassette.

Headphones

The signals are transmitted by radio to a small receiver built into the headphones with some form of volume control and muting function which is adjusted for comfortable listening. You are given ample time to make yourself as comfortable as possible and to prepare your paper and desk before the examination begins. Firstly some text in plain language is sent so you can adjust the headphone controls to your needs. Try moving your head around

and see if this affects the received signal. The signal received is low power and the built in antenna is very directional, so do this now and make sure everything is working before the actual examination begins.

Next the examiner sends two to three minutes of text at exactly the same speed, tone and pitch as the actual examination. This is to calm the jitters and make you feel more at home. Listen very carefully to the text; treat it like the actual exam as this is the last practice you are going to get.

At the conclusion of this you are given time to make any last minute changes to your headphones and/or desk if required. I would leave things alone at this stage - better not to rock the boat at the last minute. The examiner usually asks if anybody has any final questions before the examination begins; if there are no questions the test then begins in earnest.

Somewhere in the course of the exam there is bound to be a letter or number which will seem to be impossible to copy. Don't try and work it out or you could possibly miss further text. A lack of concentration about the missing text could be fatal to the final outcome of the test.

A minority of people believe they can pass the required examination just on luck with very little preparation; others have no expectation of passing it until next time, they just want to sit in and experience it. Whatever the reason, you will probably hear pens or pencils hitting the desk, and sounds of disgust coming from these people as the examination progresses. Try to ignore them and concentrate on what you are doing; hopefully it will go well for you and you will be rewarded with a pass.

Audio Cassette

The Morse cassette follows similar outlines as above, except for a few points.

The Morse on the cassette these days is computer generated with the correct 3:1 ratio. The examiner usually sets the volume to a comfortable level for all concerned. If your hearing is not as good as it once was, by all means move closer to the front or nearer the speaker until it feels right for you. You are then given a two to three minute practice run before you sit for the final examination.

Preparation

If you are sitting for your Novice test, learn at about 8 wpm for the 5 wpm test; and about 14 wpm for the 10 wpm test for the Full Call. Don't go any higher as you might find it difficult to copy the slower text.

Set aside say 15 minutes per day and not a two hour session once a week.

Don't touch a key for sending, until you can correctly copy (more on this next month).

Make sure you are well prepared; give yourself, say, six months lead time to the examination.

Take to the exam with you some spare pens or pencils; there is nothing worse than running out of ink or breaking a lead during the exam.

And above all, enjoy yourself. It will open the doors of the world to you.

Finally, most examinations are either run through the WIA or your local radio club. Further enquiries can be made to them for more detail.

Good luck and good Morse to you.

ar

Good Web Site to Visit

A comprehensive e-mail listing of VKs on the Internet can be found on a Web site, run by Allan VK2NNN. It is believed that this listing was formerly made available by Guy VK2BBF. Allan says he has more than 550 VK e-mails at the time of writing. He is updating them daily. If you are looking for the list, the URL is:

http://www.ruralnet.net.au/~allan/VK_List/amateurs.html

You will also find under Allan's care the homepage of the Australian Amateur Radio Web Ring. This is a very good way for Australian hams to have their own homepages listed and a great way for amateurs to tour Australian ham sites, even if you do not have your own homepage. The URL for Webring is:

<http://www.ruralnet.net.au/~allan/webring2.html>

Allan's site contains much useful information including listings of amateur repeaters in Australia, State by State, and many general links. Certainly worth a visit and a very good example of how the Internet may be used as an adjunct to ham radio.

**Help protect
our
frequencies!
Become an
Intruder
Watcher.**

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Following my introduction to my March column, discussing distress signals from small vessels (under 1600 gross tons), I received two interesting letters from my readers, for which I thank them.

Neil VK2BBH refers to his past sailing experience and quotes regulations under the International Convention for the Safety of Lives at Sea, which indicate that radio-telephony be fitted to foreign going vessels of the coaster type being less than 1600 tons gross.

Jack Haden VK2GJH, a well known DXer under a variety of Pacific callsigns, wrote: *"The majority of small island traders which voyage within their own respective countries, seldom, if ever, use CW on any band. Primarily radio contact is maintained by way of skeds, etc on the HF marine network using 2, 4, 6 and 8 MHz SSB. Some 'company frequencies' also exist where constant communication is maintained; usually government owned vessels.*

"Channel 16 and 67 on VHF (156 MHz) also provides fairly reliable communications, especially in the low lying coral atoll islands of Kiribati and the Marshalls. As with a number of trading companies in the Pacific, amateur radio is used illegally by some shipping companies for regular radio skeds away from the marine band traffic.

"Yes, it's illegal, but has been happening for more years than I can remember. How would the Australian radio amateur know that the foreign language 'gibber' heard on 7060 is illegal island traffic? Unless he understands Gilbertese, or whatever the Pacific language heard at the time, he is none the wiser!

"The sextant too, has long vanished from the navigation bridges of island vessels. Handheld GPS units are now common, even on the most decrepit rust bucket you could imagine; such is technology!

"Distress traffic from ageing island vessels, which are most unseaworthy by our standards, is always a touch and go situation. Outside of sked time, some vessels have been

known to be aground on a reef for a number of hours before help is raised on the radio. In the late 1980s I handled a distress call from a 16,500 ton merchant ship on 14 MHz amateur radio in distress off Kanton Island. He couldn't raise any assistance on the marine bands due to defective equipment; lovely, eh? That's the Pacific, old boy, and that's life."

ITU Day - 17 May 1998

The state divisions of the WIA are allowed the use of the special callsign AX*ITU (* representing the Division call area) from 0001 UTC on 17 May until 2359 UTC on the same UTC day. In the eastern Divisions (VK1, VK2, VK3 and VK4) this will be 1001 local time Sunday to 0959 local time on Monday, 18 May.

The New South Wales Division will activate AX2ITU on a variety of HF bands and modes. QSLs for this call should be sent to the QSL manager VK2PS either direct (SASE) or via the Bureau.

The Victorian Division of the WIA will be represented by the Eastern and Mountain District Radio Club which will activate AX3ITU. QSLs for this call should be sent to VK3ER, PO Box 87, Mitcham VIC 3132 (SASE) or via the Bureau. A special QSL card will be printed for the event.

"New" DX Country - N40AA

The South China Sea DX Team (SCSDXT) has announced that, having studied the new DXCC rules which came into effect on 31 March 1998, they discovered a number of new DXCC entities (countries). One is the Temotu Islands (formerly known as Santa Cruz Islands).

This island group is located in the South Pacific and is the easternmost province of the Solomon Islands. It was suggested that the new entity (country) will consist of all the islands making up the Solomon Islands' Temotu Province. These include the Reef Islands, Duff Islands, Tikopia Island, Amuta Island and Fatuaka Island, with a total surface area of only 926 sq km although they are scattered over more than 150,000 sq km of the South Pacific.

The H40AA activity will take place from Lata, a small village on Nendo Island, the largest island in Temoru located at 10 degrees 43.5 minutes South and 165 degrees 48.1 minutes East and far off the tourist path.

Temoru is separated by more than 350 km (the new distance) from the rest of the Solomons (the "parent" country) and should easily qualify as a "new" DXCC entity.

The SCSDXT together with the Solomon Islands Radio Society, has organised a full scale DXpedition to Temoru and is preparing an application for the new DXCC "entity" status.

The team for this operation includes amateurs from four continents and consists of H44GP, H44GR, JA5DQH, N4GN, N7NG, OH0XX, OH1RY, OH2BE, OH2BH, OH2TA, W6OSP and 9V1YC. The Solomon Islands Telecommunication Authorities have agreed to assign the H40 prefix to this and any future amateur operations from that island.

Two small aircraft have been chartered to transport the operators and equipment from Guadalcanal to Temotu Islands. The operators arrived on the island on 21 March and were using their individual H44 calls whilst making final preparations for the main event. They took part in the CQ WPX SSB contest.

The birth of a new (hopefully) DXCC entity took place at 2359 UTC on 31 March when the H40AA callsign was aired for the first time. The team employed the usual YAESU FT-1000MP and FT-900AT transceivers, as well as Alpha and FinFet amplifiers.

Cards for the H40AA activity will be direct only, or via the OH Bureau to Jarmo Jaakola OH2BN, Kiillette 5C 30, Helsinki 00710, Finland. It is hoped that, if the status of H40AA is approved, the new entity will be on the official DXCC list as from 1 October.

There is also a further rumour, from reliable sources, that two other island groups will be declared in the future as new DXCC entities.

Southern Sudan - ST0 - Deleted

The ARRL Membership Services Committee announced on 12 March that both the ARRL DXAC and Awards Committees have voted to delete Southern Sudan ST0 from the DXCC list.

While the status of Southern Sudan changed in 1983, QSOs made before 1 January 1995 will count for the deleted country. There are two reasons for that decision. First, there have been accredited operations since 1983. The QSL cards from those operations have been processed, many of them onto paper records. It would be very costly, and almost impossible in terms of money and time, to search and remove the post 1983 ST0 QSOs individually from the records.

The Committees agreed also to make no change in the status of Fernando de Noronha PY0F and Kure Island KH7.

The DXCC countries list will now drop to 328. Southern Sudan is probably the last country to be added to the DXCC "Deleted Countries List" raising the total to 58. Once the new DXCC 2000 rules came into force as from 31 March, no more deleted countries or entities will be added to the deleted list; the countries simply will be removed from the list.

Southern Sudan was deleted from the list because ST0 no longer meets Point 1 of the DXCC countries list criteria, that of independent state of administration. The Addis Ababa Accord gave ST0 a "distinctively separate administration". This administration was dissolved by the Government of Sudan in 1983. The end result was a civil war which is still continuing. There is no government anymore in Southern Sudan; all the region is under the administration of the Sudanese Government.

It has been reported that Claus STIAP will be active from Southern Sudan area as STOAP between April and September. He will only be on 20 metres on 14332 kHz around 0730 UTC. QSOs will count as Sudan. QSL via DJ6SI.

St Brandon Island - 3B7

This DXpedition, organised by a team of fifteen amateurs mainly from Switzerland, will take place from 5 to 17 May. The Cargados-Carajos archipelago (St Brandon) consist of 22 small islands, one of them being Raphael Island where the DXpedition will be located. They promise to give a chance to everybody, as far as possible, including the QRS and QRP operators.

The island group belongs to the Republic of Mauritius (3B8) and is situated about 400 km to the north of Mauritius itself. Jacky 3B8CF/3B9 who operated from St Brandon in September 1991 is part of the expedition.

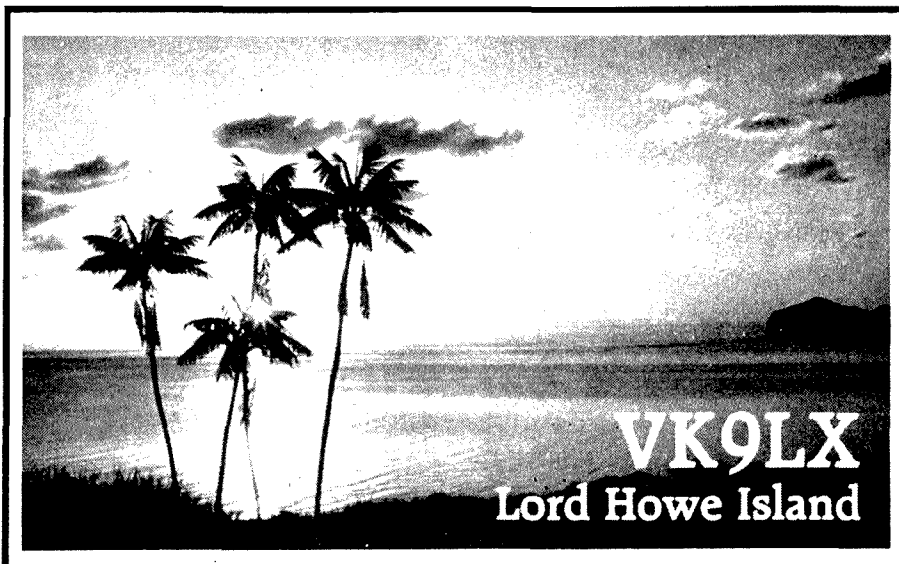
The expedition will have four stations with 1 kW amplifiers and corresponding antennas. They plan a 24 hours operation on all bands according to the time of the day on CW, SSB, RTTY and SSTV. Proposed frequencies are: CW 1826.5, 3507, 7007, 10104, 12024, 18074, 21024, 24894 and 28024 kHz; SSB: 1.842, 3799, 7065, 14195, 18145, 21295, 24945 and 28475 kHz. All operations will be split, "up" to a maximum 15 kHz for CW and 20 kHz for SSB.

QSL via HB9RF/3B7, Postfach 37, 6319 Allenwinden, Switzerland.

Canary Islands - EG80TA

This special event station will be situated at the 1998 "European IOTA Convention" to be held from 1 to 3 May. The Convention Headquarters will be situated at the Reina Isabel Hotel on the Canary Islands. The Convention will follow the regular pattern of conventions generally; however, the main topic will be the IOTA program and its future. There will be visits to local sites of interest and there will be several oral and video presentations about a variety of island DXpeditions, including Spratly and Heard Islands and other adventures.

The main guest speaker will be our own Mal Johnson VK6LC, the well known



The QSL card for the November 1997 VK9LX activity.

Australian "island activist", who will talk about his own IOTA adventures and about "How to organise an Island operation in Australia".

My spies tell me that he will also make some important announcement about his future IOTA activities.

Amsterdam Island FT5ZH

The Lyon DX Group has announced that the next DX activity on Amsterdam Island will take place as a DXpedition during December 1998. The main operator will be Mehdi F5PFP and the second operator will be Eric F5SIH.

They intend to stay on the island between two boat visits which could mean one month of activity. There will be no official government work involved, therefore Mehdi can occupy himself totally with amateur radio. The activity will be on all bands, 160 to 10 metres, and use CW, SSB, and RTTY. They will have amplifiers and beam antennas.

If you feel that you can support this activity with your donation, then please send your contribution to the treasurer of the group, Eric Blanchard F5PXT, 2 Rue Bichat Bat 32, 69002, Lyon, France.

Campbell Island - ZL9

Plans are now at an advanced stage for the 1999 January DXpedition to Campbell Island. ZL9, a New Zealand sub-Antarctic group of islands situated south of New Zealand at 51 degrees South and 170 degrees East, at about the same latitude as the Australian Macquarie island.

The Kermadec DX association, which had a very successful DXpedition to Raoul Island in 1996 (ZL8RI), will mount a full scale DXpedition with an international team of

operators from New Zealand, Japan, Canada, the United States and Ireland. The necessary Government permissions were obtained and transport is already arranged.

The expedition will start on 9 January and they intend to be on the air until 25 January operating SSB, CW and RTTY on all bands. Ken Holdom ZL2HU is the team leader (The Kermadec DX Association, PO Box 56099, Tawa, Wellington, NZ) and he is looking for financial support for this activity which will cost approximately \$US65,000. All donations will be acknowledged and will be refunded in the event the DXpedition does not proceed.

Future DX Activity

* Vietnam - Toly 3W5FM is often heard on 20 m CW around 14007 kHz at about 1330 UTC. QSL via UA0FM, PO Box 66, Vladimir City, 63011, Russia.

* Mongolia - A Hungarian DX group, members of the Pannon DX Club, will operate from Ulan-Bator from 17 May to 2 June. The team includes HA0HW, HA4GDO, HA6NL, HA7SK and HA7VK. They plan to keep two to three stations simultaneously on the air for 24 hours a day in the SSB, CW and RTTY mode. Suggested frequencies are CW: 1821, 3511, 7011, 10101, 14011, 18071, 21011, 24891 and 28011 kHz; SSB: 1841, 3789, 7089, 14189, 18141, 21289, 24941 and 28489 kHz; RTTY: 14079 and 21079 kHz. The DXpedition will take part in the CQ WPX CW Contest and they hope to get permission for the special JU0HA callsign. Donations to Szabo Laszlo HA0WH, PO Box 24, Puspokladany, H-4151, Hungary.

* Guinea - 3XY7A is on air on SSB on 40 and 20 m. QSL via VE6DYS.

* Nepal - Sures 9NIHA is active on SSB

and CW with 100 W into a dipole on 20 and 15 m after 1100 UTC. QSL via PO Box 4292, Katmandu, Nepal, Asia,

* **Martinique** - Bruno F5JYD will be active until the end of June as **FM5JY**. QSL via F5JDY.

* **Iran** - **Hamid EP3HR** is now active, especially on 17 m. QSL via 12MQP, Mario Ambrosi, Via Delle Querce, 4120090, Rodano Millepini Milano, Italy.

* **Pitcairn Island** - Betty VR6YG can be heard again around 0000 to 0100 on 18115 kHz. QSL via K6RPF.

* **Ecuador** - John K4ERO is now a resident and on the air as **K4ERO/HCI**.

* **Vietnam** - **3W7TK** was heard on CW on 20 and 15 m. QSL via OK1HWB.

* **Lesotho** - John W3JLR (ex KA3DBN) will now be active with the **7P8** prefix from 1 to 21 May. QSL via K3BEQ.

* **Maldives** - Lorenzo IK5MDF will be on the air from 2 to 8 May as **8Q7DF** from Alimatha Island. QSL via his home call, Lorenzo Tabaracci, PO Box 142, 54633 Carrara, MS, Italy.

* **East Malaysia** - Peter PB0ALD will be active as **9M8CC** until 22 May. QSL via home call.

* **Rhodes Island** - Jim SV5EPB and George SV5DZG will be on the air on every weekend in 1998. QSL via the Bureau.

* **Bangladesh** - YL operator Mamtaz S21J is active around 14200 - 14216 kHz between 1230 and 1400 UTC. QSL via Mamtaz Shahid, GPO Box 3512, Dhaka - 1209, Bangladesh.

Interesting QSOs and QSL Information

* **HK/KB5GL** - Silvano - 14260 - SSB - 2230 - March. QSL via AC7DX, Ron Lago, PO Box 25426, Eugene, OR-97402 USA.

* **XW3OA** - Eric - 18145 - SSB - 1058 - Jan. QSL via SM0AGD, Eric Sjolund, Vestagatan 27, S-19556 Marsta, Sweden.

* **T88TT** - 14002 - CW - 1312 - Jan. QSL via 7M1STT, Ken Suzuki, 16-6 Nishishizu 5 Chome, Sakura, 285-0845, Japan.

* **JY9RU** - Dan - 14180 - SSB - 0510 - Jan. QSL via F6ARU, Daniel Rogowski, 94 Chem Vittone, Bellevue, F-73000, Chambery, France.

* **YS1X** - Raija - 14195 - SSB - 0529 - Feb. QSL via OH2BU Jari Jussila, Pilvijarvi, Fin-02400, Kirkkonummi, Finland.

* **4JA9R1** - Rashid - 14209 - 1257 - Feb. QSL via Box 116, Ktoprak, 81031, Istanbul, Turkey.

* **9N1FP** - Vlad - 14008 - CW - 1344 - Feb. QSL via RU6FP, Vladimir Zakharow, Kulakova 27/2 - 116, Stavropol 355044, Russia.

* **KA4IST/KH5** - Mark - 14160 - SSB - 0308 - Feb. QSL via AC7DX, Ron Lago, PO

Box 25426, Eugene, OR-97402, USA.

* **V51SG** - Sigi - 14164 - SSB - 0539 - Feb. QSL via Sigi Graf, PO Box 116, Tsumeb, Namibia, Africa.

* **9G5VJ** - 14027 - CW - 0623 - Feb. QSL via G4ZVJ, Andy Chadwick, 5 Thorpe Chase, Ripon, North Yorkshire, HG4 1UA, England.

* **4L1DX** - Shoa - 14197 - SSB - 1236 - Feb. QSL via OZ1HPS, Lars Peter Henneberg Jacobsen, Toften 18, DK-7323, Give, Denmark.

* **VP2VI** - 14 MHz - CW - 2047 - March. QSL via ABIU, Richard J Casey, 8 Nancy Lane, North Haven, CT-06473, USA.

From Here and There and Everywhere

* Harry RA3AUU advises, on behalf of the QSL Bureau of Soyuz Radiolybitelej Rossi (The Union of Radioamateurs of

... this activity ... will cost
approximately
\$US 65,000.

All donations will be
acknowledged ...

Russia) an IARU affiliated Society, "I would like to inform everyone that the only official address for the QSL Bureau in Russia is PO Box 59, Moscow 105122, Russia.

* Wally R1ANZ from Mirny is on its way from the Antarctic to his hometown Murmansk. You might work him during May as UW1ZC/mm.

* Frank DL7FT started activity from Niue as ZK2FT on 21 March. Unfortunately, whilst erecting the 80 m vertical antenna, he slipped and hurt himself badly, falling on rocks. He had cuts and bruises all over his body and was off air for a number of days. He only returned on air on 27 March. He was on 80 metres and told me that he is still visiting the doctor daily. He hopes to be active as A35FT, ZK3FT and 3D2FT/R during April and May.

* ZK1DI left South Cook for Germany on 30 March.

* Kerry VK4MZ was active from Mongolia as JT1FCO at the end of March and was also part of the Mongolian Contest station JU1J team during the CQ WPX contest. QSL direct only to his home call VK4MZ, Kerry S Viney, PO Box 381, Gympie, QLD 4570.

* From time to time you can hear Andy 9X0A working from Burundi as 9U5/9X0A

every Tuesday. Andy is situated 100 km south of Kigali, the Rwandan capital, and 30 km north of the Burundi border.

* The Iraqi amateurs have reappeared on the bands, polite and friendly. I had a long QSO with Bassam YI1RS (QSL via Box 55072, Baghdad) and with Ahmed YI1ALW (PO 7044, Baghdad). They were calling CQ at strength S8 with very few takers on 20 m at 0620 UTC.

* Satish 9N1AA, a resident Nepalese amateur, will move soon into a new house and will have an all-band and all-mode capacity including 160 metres, for which he has received special permission.

* Oleg UR8LV is active as EM1LV from Akademik Vernadsky Base on Galindez Island (AN-006). QSL via UR8LV, Oleg Satyrev, PO Box 9909, 310070, Kharkow, Ukraine.

* Daniel JY9RU left Jordan at the end of March. QSL via home call, F6ARU.

* **Estonia** - The following stations are active to celebrate the 80th anniversary of the Estonian Republic. **ES80R** (QSL via ES7RE), **ES80Q** (ES5MC or ES5RY), **ES80J** (ESIAX), **ES80L** (ES6PL) and **ES80M** (ES1QD).

* The special call **HG5P** will be used on 14 - 31 August and 14 - 31 October. QSL via the Bureau.

* The German DXpedition on Chatham Island began on 23 February using the **ZL7DK** callsign. Five German amateurs and one German with an Indonesian callsign made 25,648 CW, 1,629 SSB and 1,635 RTTY contacts during a two week activity. They were on the air on nine bands. All QSLs go to DK7YY, Falk D Weinhold, PO Box 700 343, D-10323 Berlin, Germany.

* It has been reported by Terry VR6TG on Pitcairn Island, that the VR6 prefixes will switch to VP6 prefixes beginning 1 May 1998. It appears that the VR prefix was given to China at the time when Hong Kong was returned to China.

* The Portuguese DX Net has been reactivated on Saturdays between 1000 and 1200 UTC on 21280 or 28480 kHz. Net controller is CT1ERK.

* Steve K2WE and Les W2LK were active from Vietnam as 3W6WE and 3W6LK. QSLs for these activities will go via their home calls. The Vietnamese Kasati Club Station was also active with the callsign 3W6KA. QSL for this call is via Kasati Ham Radio Club, PO Box 76, Saigon, Vietnam.

* Michael reminds everybody again that QSLs for **5R8EE** and **FR5EL** should go direct to his only safe mailing address: Michael Hoarau, PO Box 87, F-9783, Tampon, Reunion Island, France.

* If you have not heard any Indonesian stations on the air between 23 February and

14 March, the reason was that they were under strict "radio silence".

* Correction of age. "Macka" VM4AA, about whom I wrote in my March column is not 78 years old, but 87! We wish him continued good health.

* Bill Kenamer K5FUV, the ARRL DXCC manager, will act now as Membership Service manager at ARRL HQ as from 20 April. Bill's replacement has not yet been announced.

Late News - H40AB

Whilst the Temotu DXpedition H40AA has been widely publicised since the middle of March, Jim Smith VK9NS of HIDXA was quietly preparing to put the possible new DXCC entity on the map under the callsign of H40AB. He started operating on the same day as the first station. Jim flew to Santa Cruz (Nendo) Island, then sailed a canoe for three hours to reach Pigeon Island which is in the Reef Island Group. He opened up on the well known frequency of 14222 kHz and said that he would be there until about 12 or 13 April. He was using battery power generated by solar panels, but by 5 April he will have a proper power supply flown in from Honiara.

Jim complained about the multitude of mosquitoes on the island. At the closing of this column on 1 April both H40AA and H40AB had very big "pile-ups".

QSLs Received

5A28 (5 m - OE2GRP, Box 200, 5203 Neumarkt, Austria); ZB2/DL2NBU (4 m - DL2NBU); VP6CW1 (3 m from Serge Shitov, PO Box 559, Port Stanley, Falkland Islands, United Kingdom); TT8JFC (4 w - WA4ZBJ, L B Cantrell, PO Box 187, Loch Loosa, FL-32662, USA); V44NK - (5 m - Karl D Sage, PO Box 549, Charlestown, Nevis, West Indies); A92GD (3 w - K1SE).

Thank You

Many thanks to all who supply me with news and other information, which I appreciate very much. Special thanks to VK2BBH, VK2EFY, VK2GJH (T30JH, C21JH, V63JH, etc), VK2ICV, VK2KFU, VK2TJF, VK2XH, VK2ZRH, VK3DYL, VM4AA, VK5WO, VK6LC, VK6NE, ZK2FT, *DXCC News Release, Ohio/Penn DX Bulletin, QRZ DX, The 425 DX News, The DX News Letter* and the *DX News Magazine*.

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Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator
Freepost No 4, Rubyvale QLD 4702
Tel: 07 4985 4168
Packet: VK4KAL@VK4UN-1

The Region 3 Intruder Watch Co-ordinator, ZL1CVK, supplied the following information.

"Broadcast stations are again in the news. The importance of trying to identify these stations cannot be stressed enough. Broadcast station engineers are among the few professionals who do NOT like to cause any interference on other bands. They have proven to be the most receptive to advice that they may have faulty equipment and in many

cases take immediate action to resolve the problem, thus removing themselves from our bands. But we must get a positive ID.

"Indonesian intrusions, particularly in the 40 and 20 metre bands, appear to be decreasing. Vigorous defence of these bands by VK amateurs, seasonal variations in work habits, increased use of cell phones, or perhaps the very depressed state of the Indonesian economy, may all play a part in this welcome decrease. Whatever the cause, it is good news for legitimate amateur users.

"The Voice of Russia on 7.100 kHz will not go away. This is in spite of efforts by many organisations and individuals. Region 1 MS Co-ordinator, Ron G4GKO, in particular, has orchestrated a huge response from amateur organisations in that region.

"However, to date VOR has refused to move, so keep the reports coming in. To help, I can now give an address: The Frequency Manager, Voice of Russia, Pjatnizkaja 25, 113 326 Moscow. The e-mail address is listed as letters@vor.ru.

"At present, signals which are allowable in Region 1 but not in Region 3 are still treated as intruders."

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A summary of intruders logged during February.

FREQ	DATE	UTC	EMM	DETAILS
3.560	04	1130	A3A	Political party speeches
3.560	13	1821>	A3E	UiBC, non amateur, M & F voices
3.588	03	2050	A3A	UiBC, non amateur, lang pos African?
3.629	03	2044	A3J	Ui Asian network, non amateur
7.000	01	1044	J3E	UiBC, foreign voices, non amateur
7.016	06	1114>	A3J	Ui Asian, musical recital, songs
7.020	13	1540	A3E	UiBC, alternate freq de VOBME
7.020	01	1040	J3E	UiBC, non amateur, foreign voices
7.025	05	1115	F1B	RTTY, 425 Hz, 50 bd encoded tfc
7.035	02	1025>	A1A	UiCW, encoded 4 fig tfc
7.037	09	0930>	A1A	BCN, op daily to 2034z CIS
7.0389	08	1912	A1A	BCN, groups, 3 x "P" daily CIS
7.0391	08	1910	A1A	BCN, groups, 3 x "F" daily CIS
7.085	13	1535	A3E	VOBME, Asmara, local service
7.092	19	1123	NON	Unable resolve voice in AM
7.096	11	1215	xxx	Parasitic sp xmission, 12 kHz wide
7.0985	26	0005	A3A?	UiBC, no further info
7.0988	21	0500	A3A	Voice of Russia, world serv. daily
7.105	16	Daily	F3?	UiJAM, China to Taiwan?
10.138	23	1122	A3J/L	UiBC, Asian net, non amat/music
14.116	23	1100	F2B	UiVFT, n/amat, nil shift measured
14.162	06	1205	B9W	Sig not hrd previously, 5 kHz wide
14.210	25	1212	A3A	UiBC, too weak for ID
14.210	09	0428	F1B	Int tfc encoded, 425 Hz 50 bd
14.240	26	1110	A3A	VoA, MOST Chinese
14.300	23	1109	xxx	Parasitic, 12 kHz wide, sin 7.046
18.070	13	1010>	xxx	UiTeleph, Indonesia, n/amat, males
18.072	20	1006	J3E/U	UiBC, n/amat, foreign male voices
18.075	16	1138	A3E	UiBC, SE Asian, n/amat
18.105	13	1030	J3E/U	UiBC, sw brd/ph/patch, n/am, Indon
18.131	16	1047	J3E/L	UiBC, n/amat, Chinese?
21.178	10	0720	A3E?	Non amat/commercial, brg 98 deg from Perth, bringing it to Melbourne area: I bring this to notice as it seems to be a network of illegal ops using dubious call signs, eg AXM 369 etc, within VK - be on alert for it.

**Have you advised
the ACA of your
change of address?**

ARDF Amateur Radio Direction Finding

Ron Graham VK4BRG

PO Box 323, Sarina QLD 4737

Packet: VK4BRG@VK4BRG.FCQ.QLD.AUS.OC

E-mail: rongraham@magnet.com.au

ARDF Column

Some readers may have noticed a break of two months between the last two columns. This was to enable the magazine's editor to reorganise the bi-monthly columns. So, now this column should appear every odd numbered month.

Thanks go to Mark VK3JMD, his wife Sue VK3LSL, and Jack VK3WWW for their major contribution to the March column.

This could be a good time to remind everyone it was the writer's intention that this column would provide an open forum on matters relating to direction finding in general and ARDF in particular. So, if any individual or group has anything to contribute, from a few lines to a few paragraphs, I would be pleased to hear from you.

Future of ARDF

It is pleasing to note Guides and Scouts getting involved in ARDF type activities, particularly when there is a major amateur radio involvement. The Guides in South Australia, promoted from their headquarters level, are getting some two metre equipment together with the assistance of Matt VK5ZMC and, I understand, others. To the north, in Darwin, Frank VK8FT is building two metre equipment for Scouts. Hopefully, we will be able to report more on their respective activities in the future.

It is my opinion that a definite contribution from amateur radio to the "public arena" will be necessary for our survival in the future. This contribution would both help us conserve the right to our bands and, as we would be more in the public eye, should assist in the recruitment of more potential amateurs.

Currently, as amateurs, our public spirited activities are essentially confined to JOTA and WICEN (in which we could include communications assistance at various rallies, etc).

I think there are some ARDF type activities that can offer various inputs to the above mentioned "public arena" which we should be considering.

Possibilities that come to mind and that we may be able to pursue are:

1. Follow up Guide and Scout involvement.
2. Try and introduce ARDF activities at the regular JOTA. This could lead to more serious involvement as referred to in item 1.
3. Assistance to various "wildlife research groups" in tracking animals, birds and other creatures.
4. Assist with locating "wanderers".
5. Assist in locating activated emergency beacons.
6. Others.

Tracking Bats and Owls

With reference to item 3, I note recent comments from the Melbourne Fox Hunting Group regarding their possibly working with the Department of Natural Resources and Environment and assisting in the tracking of bats. The frequency used is in the 150 MHz area. Also, from the US I noted "Hams needed to assist Wildlife Research". This referred to the tracking of endangered Burrowing Owls from Central Canada that migrated south last fall. Apparently bad weather kept tracking aircraft on the ground so hams, particularly those with portable DF equipment, are being sought to assist in locating these birds as they migrate back northwards. Pulsed signals near 170 MHz are used.

Taking this theme further, I noted on a recent trip to Antarctica quite a lot of effort going into tracking a variety of creatures. This included albatross on their 5,000 km journeys, seals to a depth of 80 metres, penguins on their (often hundreds of kilometres) trips across the sea ice and their return. Reference was made to some of that tracking being "done via satellite". Nevertheless, there must be some interesting technology involved; it would be nice to have more details.

The point of all this is many of those "research groups" are often operating on limited budgets, and I am sure most would appreciate any free assistance that amateurs may be able to provide.

Wanderers

In item 4 the term "wanderer" is applied to those (often the elderly) people who wander away from nursing homes, etc. Sometimes these people are in the care of relatives and live in a normal house type situation. A system exists where the person involved wears a small pendant around the neck that contains a miniature transmitter (in the 151 MHz band in this country).

From my information, the DF receiving equipment may be kept by the nursing home or the local police, or in the case of them living with relatives, one of those relatives.

These people are naturally given some training in the use of the DF equipment when it is initially obtained. One problem that has been mentioned is that, in the case of the police, the person that has received the training has sometimes been transferred by the time the equipment is required for use. One can see other potential problems that could occur with people being unavailable, having lost their proficiency with the equipment, etc when they are needed. It occurs to me that a willing amateur (or amateurs) in the districts involved could be extremely beneficial in assisting with any searches and/or keeping others involved up to date with training.

Emergency Beacons

Regarding item 5, emergency beacons, these devices, operating on 121.5 and 243 MHz as used by marine and aviation, have been around for a long time. Their potential, particularly as the newer satellite system gives much better coverage, is being recognised by four-wheel drive operators, bush walkers, etc. Also, the various Australian States are, one by one, legislating that all boats proceeding "offshore" must carry a beacon. All this means a greater proliferation of beacons (some say, being used by often less responsible people) and thus a greater number of activations, both real and unintentional.

Australian authorities currently have a policy of locating ALL activated beacons. Here again, amateurs with DF capability on those frequencies can, on occasions (and particularly those in the remoter areas), be of assistance.

ARDF Challenge

I mentioned "others" in item 6, mainly as a reminder that I am sure other "public spirited" DF type activities must currently exist, or come into existence, if we are keen enough to pursue these matters.

Organisation, I guess, is what's needed if we are to become involved in these and/or other "public spirited" activities.

Who, or what body will take up the challenge?

I did learn of one more ARDF Group some weeks ago, located in Canberra. They have a homepage at <http://www.commslab.gov.au/neil.fox.foxl.htm>

Late News

In Thailand, it is reported that some 8,000 Scouts have recently learnt of the existence of amateur radio via Fox Hunting training in Scout camps. ARDF in Thailand has the support of their Crown Princess, close co-operation with the Posts and Telegraphs General Director HSIBF, and the Scout Activities Director. The Radio Amateur Society of Thailand (RAST) seems very keen to promote ARDF in their country. More details in the next column.

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Spotlight on SWLing

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FRG-7700 Second Receiver

At the recent Tasmanian Divisional Convention in Launceston I saw a very well presented Yaesu FRG-7700 sitting at the trade table. It was love at first sight and I quickly negotiated the sale with a fellow ham. I have not regretted it as it has performed remarkably well compared to my existing Icom R70, which is about the same vintage, and I am hearing signals that the Icom cannot detect, particularly on the higher frequencies. The FRG-7700 came with two accessories, the FRV-7700 and the FRT-7700, both of which initially worked after installation yet it may be that the connections are loose.

A good listener/monitor always should have a second receiver to make comparisons. This is highlighted by the contrast between the Icom and the slightly older Yaesu.

One slight drawback is that the FRG-7700 is not capable of exalted carrier selectable sideband (ECSS) like the R70. However, on AM the Yaesu is better, having several filters to choose from, which gives better audio, depending on the signal strength.

Northern Hemisphere on Daylight Saving

On the last weekend of March, the majority of broadcasters made their half-yearly frequency changes, to take account of seasonal fluctuations. This coincides with most of the Northern Hemisphere going on to Daylight Saving. The continental 48 states of the USA and five of the six Canadian provinces went on Daylight saving on 5 April and not on 26 April as I wrote in last month's column. I am unsure whether Alaska and Hawaii are on Daylight Saving.

European signals are coming in very nicely here in northern Tasmania. The African Service of Vatican Radio is easily heard at 0630 UTC in English on 13765. Also, on 13830 kHz which is outside the normal 22 metre broadcasting allocation, the Croatian Radio from Zagreb is easily heard at 0700 UTC. Interestingly, it commences with a five

minute English bulletin, often read by a female with a distinctive Australian accent. The bulk of the programming is in Croatian and is beamed to Australasia, where there is a sizeable Croatian speaking community.

Radio Slovakia International

Another new European nation that appeared after the end of the Cold War, is Slovakia. Formerly the eastern part of what was Czechoslovakia, the nation came into being for the first time on 1 January 1993 when the two nations split into separate entities.

Before what came to be referred to as the "Velvet Divorce", Radio Prague was a popular and easily heard station. Transmitters for the station were mainly on the Slovakian side and the two nations shared resources for a time; but the Slovaks have gradually eased the Czechs out.

Also, for a time, these senders were leased out to Adventist World Radio. Radio Slovakia International is based at Bratislava and its programming was not often heard here. Now, with the introduction of European Summer Time, the broadcasts are an hour earlier, which has made it easier to hear them. Listen on 9440 kHz from 0700 UTC for a 30 minute daily English program followed by a Slovakian program.

Radio Prague

Radio Prague, the Czech external service, is also having budgetary hassles. Many language services were recently cut and no funding has yet appeared. I have not heard it for quite a while, and reports indicate that it is a European only service.

Radio Portugal off Short-Wave

Yet another nation has left short-wave. Radio Portugal made its last broadcast on short-wave on 31 March. Lisbon only commenced external broadcasts in the early sixties and was at one time known as the Voice of the West. All external broadcasts via HF now have finished. However, they continue on the Internet in Real Audio format and also via satellite feed to re-broadcasting domestic stations in former African colonies, Brazil, Macao and the Cape Verde Islands off the North African coast. Also, Estonia is again off short-wave although external programming continues on MW and also on Real Audio on the Net.

Voice of African Democracy

The US is to fund an independent "Voice of African Democracy" which is to be a part of the VOA, yet separate from it. Programming should commence next month in English, French, Hausa and Swahili, plus three other prominent African languages. It will be on short-wave and also be available for domestic

relay. However, the latter is highly improbable, as the media is heavily State controlled in the majority of Africa.

Radio Australia - Darwin Relay

The future of the former Radio Australia Darwin relay is in the balance. Almost 12 months ago the eight senders were put into mothballs when our own external services suffered a huge budget cutback. Programming was also significantly reduced. The 24-hour English service has virtually become a relay of Radio National, the ABC's arts and cultural network.

Radio Australia does continue from the Shepparton, Victoria site with virtually flea-powered transmitters of 100 kW or less. Darwin's transmitters were 250 kW and are significantly closer to the target areas. The 23 March issues of the *Melbourne Age* had a very interesting article by June Factor, entitled "Asia now waits for switch on Radio Australia". Since the Darwin site was closed, Asian audiences that formerly relied on hearing Australia's friendly voice, now struggle to find it from Shepparton.

Late last year, a massive economic collapse hit many Southeast Asian nations such as Indonesia, Malaysia, Thailand and South Korea. An ambitious scheme to have an Asian satellite system broadcasting TV and radio into the region has now floundered, due to a combination of a launch failure and the extended economic crisis. Some commercial broadcasters using existing facilities also have gone under, because of the lack of enough sponsorship and the fact that very few people have satellite dishes.

It is quite apparent that the majority of listeners in the ASEAN region will still be relying on short-wave radio to get their unbiased news and other information.

Hence, there is pressure for the re-introduction of the Darwin relay to get the signal into the target area.

Other broadcasters are aware of the strategic significance of Darwin and some have already put out preliminary feelers for either using it or acquiring it outright. However, the Federal Government is acutely aware of how this could impact, when it turned down an American request for the clandestine American financed "Radio Free Asia" to use it to broadcast trial programming in Lao and Burmese.

It is believed that the Chinese government made their position clear to Canberra on their views about RFA and it was heard loud and clear. Will we see the Darwin site reactivated? Only time will tell.

(My thanks to Drew Diamond VK3XU, for alerting me to the original "Age" article.)

ar

AMSAT Australia

Bill Magnusson VK3JT

RMB1627, Milawa VIC 3678
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John Glenn ... A Potential Amateur?

Veteran astronaut John Glenn is reported as having an interest in obtaining an amateur radio operator's licence in time for his planned return to space on board the STS-95 US Space Shuttle in October this year. A SAREX package is expected to be carried on STS-95. European Space Agency astronaut Pedro Duque of Spain will also be among the international crew aboard the STS-95 shuttle flight. Pedro holds the amateur radio callsign KC5RGG.

New Cavity Filter for MIR Amateur Radio System

The Progress 38 cargo rocket has delivered the new MIREX-DCI antenna filter to the MIR space station. This filter will be used to prevent interference to the two metre PMS station from commercial transmitters aboard MIR which operate on adjacent frequencies.

The filter is a custom designed antenna cavity which will block the interference with a combination of pass band and notch filters. The filter is tentatively planned for installation in the April/May time frame. It is hoped that this will significantly improve the performance of the two metre MIR PMS packet system.

So, all you people who had planned to avoid QRM by going off into outer space at the first opportunity, don't bother! It will probably follow you.

Oscar-11 Still Going Strong

Oscar-11 celebrated its 14th birthday on 1 March 1998. It is a wonderful achievement by the UoSAT team at the University of Surrey, England who designed, built and launched the satellite in a period of only six months. As one would expect, there have been a few component failures during its long time in orbit. Despite this, Oscar-11 is still going strong, which is a credit to those responsible for its design and construction.

This satellite has contributed a great deal

to the educational scene right around the world. Like many other class-room teachers I used its telemetry broadcasts as part of the study course for my year-12 electronics students.

It was also used at my school during the Trans-Polar Ski-Trek back in 1988. A party of Russian and Canadian scientists made an epic journey on foot from Cape Arcticheski in northern Russia, across the ice to the north pole and then on to Ellesmere Island in northern Canada. A total of 100 days on the ice.

The reliability of normal navigation methods was questionable. Proximity to the north magnetic pole made compass navigation almost impossible. Cloud made celestial navigation difficult. GPS was in its infancy then but the party did carry an emergency location beacon.

Information relayed from this beacon to UoS was uploaded as a digitalker message to UoS Oscar-11 by the team at Surrey. This was in turn broadcast by Oscar-11 as it orbited the Earth and many schools tuned in each morning to read the location of the trekking party. I remember this being a very popular activity among my classes with students being lined up outside the electronics lab before class opened so as not to miss hearing the early passes around 8 am each day.

I still have the chart we made of the north pole area with stick-pins to show the progress of the ski party across the ice. Those experiences will live long in the memory of so many students around the world. Long live UoS Oscar-11.

If you want to find out more about this rather special amateur spacecraft, Clive Wallis G3CWV has recently established a web site for matters concerning UoS Oscar-11. Look for it at <http://www.users.zetnet.co.uk/clivew/>.

After ground control operations that took place during the third week of March, the 145.826 MHz VHF-FM beacon has been reported as transmitting normally. Telemetry shows the "S" band beacon to be turned ON. This beacon, along with the one on DOVE DO-17, has become rather important in recent times as many people gear-up for Phase 3D. The two beacons provide an excellent "live" test signal for "S" mode receivers and antennas at ground stations.

AMSAT-VK Pioneer Turns 90

Charlie Robinson, ex VK3ACR and now VK7KP, is well known to those VK amateurs who have been interested in satellite matters since the early days. Chas recently celebrated his 90th birthday and it was very pleasing to have him call in to the AMSAT-VK net on 80 metres on that very night.

Many will recall the broadcasts made by Chas when EQXs and keplerian elements

National Co-ordinator
Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org
AMSAT Australia Net
Control station - VK5AGR

Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.

Frequencies (again depending on propagation conditions):

Primary - 7.068 MHz

(usually during summer).

Secondary - 3.685 MHz
(usually during winter).

Frequencies +/- QRM.

AMSAT Australia Newsletter and Software Service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand, and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia

GPO Box 2141

Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, <ftp.amsat.org> and following the sub-directories to "KEPS".

were read out and diligently copied down by hand by amateurs all over VK. In those days, PCs were in their infancy and the Internet was unknown to the general public. Satellite passes were calculated using plotting devices like the "Oscar-Locator" or by extrapolation from a known equator crossing (EQX).

Chas kept the AMSAT-VK net going for a number of years before handing over to Graham VK5AGR. He was also one of the original AMSAT columnists for *Amateur Radio* magazine.

You'll not hear Chas on the satellites these days but he still takes a keen interest in satellite matters. He is hale and hearty and active on 80 metres with his other interests including computing, Internet, packet and digital imaging. Good on you, Chas. Congratulations on celebrating your 90th birthday in fine style.

Andy on MIR Space Station

Sporting the rather unique callsign VK5MIR, Andy Thomas has settled into the routine on the Russian space station and has been having regular voice contacts with Australian amateurs during his recreation time. Andy's pleasant manner and very clear enunciation make it a pleasure to exchange a few words with him.

He has been in great demand during MIR's excursions over Australia. I can't ever recall having heard so much activity. This special event has meant that a lot of stations are trying for a contact, perhaps for the first time with an orbiting satellite.

Newcomers are urged to follow one or two simple rules. These have been well publicised on packet and in print but it won't hurt to reiterate them here:

Firstly, on the subject of calling, please realise that calling without first listening is unwise, and discourteous to all others trying to make a contact. Make sure you can hear Andy and then take the time to listen to what is going on. If he's in contact already, then do him the courtesy of allowing him to finish the contact before calling. If he says he's listening for a particular station and it's NOT you, then please don't call.

Secondly, on the wider scene, remember that you may only be able to hear activity within a 20 km radius. Andy can hear nearly all of Australia at the same time. A clear channel for you will probably not be clear for him. Once again, wait until he calls for another contact before transmitting.

Finally, if you are lucky enough to have a contact with Andy, the rest is in his hands. He may feel like a chat or he may want to make a few more quick contacts before "going over the hill". Please let him be the

judge of that and, until the backlog clears, be content with one contact.

Yet Another "SPUTNIK" Planned

Who could forget the flurry of activity that resulted from the hand launching of the SPUTNIK replica late last year from the Russian Space Station MIR. As part of the preparations, TWO replica models were prepared and sent to MIR.

The good news, recently released by Miles Mann, is that the spare one is scheduled to be deployed from MIR in the latter part of this year. It will undergo an upgrade which will see the replacement of the battery and some circuitry added to allow voice announcements to be made in several languages.

You can be sure that this new launch will cause as much of a flurry among the amateur radio fraternity and among schools as did the first one.

What's Going on with OSCAR-10?

Strange things are happening on board the old flagship. Reports are coming to hand from various gurus that some unexpected events may have taken place on the ageing AO-10 spacecraft. Analysis of the beacon and transponder passband has led some to believe that the high gain downlink antennas may

have been switched on but that the low gain uplink antennas may still be in operation.

Some months ago, the "Z" axis spin of OSCAR-10 (that's the spin that originally stabilised the spacecraft), dropped to virtual zero but it is thought now that AO-10 may be yawing around the "Z" axis in a large arc. This would account for the nulls that are observed as AO-10 "spins".

Some random FMing has also been observed and it was at first thought that this was happening in synch with the rotation but this has since proved not to be the case.

Summary: Your guess is as good as any at the moment but gradually a clearer picture will be built up as more observations are made.

Now Israeli Amateur Radio Satellite Launch News

Speaking on behalf of AMSAT, Shlomo Menuhin 4X1AS announced that at long last, barring any major difficulties, the Israeli Amateur Radio TECHSAT II, produced at the Technion University in Haifa, will be launched in late April or early May 1998 (that means it should be imminent as you read this!).

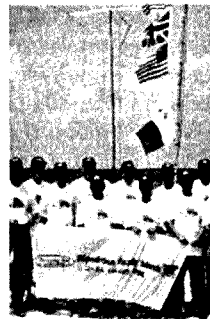
The satellite will sport a packet radio store and forward mailbox operating at 9600 baud. It will be launched from Kazakhstan, and Shlomo will be on hand to represent AMSAT. This information came via Assi Friedman 4X1KX. ar



Radio and Communications

Incorporating AMATEUR RADIO ACTION and CB ACTION

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Okay, this gadget at left looks like any other 2m handy. But it isn't — it's a tri-band radio, and it works a treat! And who are these handsome fellows on the right? They activated Spratly just a few weeks ago. Read their great story!

May's R&C has so many stories jammed into it that it's almost embarrassing. Just check out this lot:

- THE CONSTRUCTION ZONE: Harold, VK3AFQ has a great project to build. It's a DC dummy load.
- REVIEW... Icom IC-T8A 6M, 2M and 70cm handy. It's easy to use and very easy on the pocket...
- AMATEUR RADIO IN PAKISTAN. Travel journalist Tom King, VK2ATJ, visited Pakistan. Here's his report.
- REVIEW: Kenwood TS-790A tri-Band satellite transceiver. You can jump on the satellite band wagon!
- SIX metres de KL7. The bands are jumping, so our six metre columnist went to Alaska. Why? Why not?
- As usual, we have our three DX columns, mods and more... the best stories and regulars every month!

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v3ce

VHF/UHF

An Expanding World

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PO Box 169, Meningie SA 5264

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E-mail: vk5lp@ozemail.com.au

All times are UTC

Andy Thomas VK5MIR Active from Space

Many stations have now worked Andy VK5MIR on various passes of the MIR space station, including some mobile stations and those with low power. The VK5s and VK6s seem to have been particularly successful.

I worked him using my stacked vertical antenna at 0948 on 21/3 and his signals were S9+40 dB during the contact on 145.985 MHz. I understand Andy runs about 10 watts of FM. With his signal so consistently strong, it emphasises the value of a VHF signal on a non-obstructed line-of-sight path over a few hundred km.

The E-mail VK-VHF Reflector

Andrew Davis VK1DA makes a few comments which are worth digesting. He writes: "I am sorry to see personal comments being made on this list again. Ladies and Gentlemen, please keep personal comments off this list. They are not constructive, it only demonstrates how easy it is to fire off something in the heat of the moment, but it stays in all list members' e-mail in-boxes forever. You will be remembered for the words you write here. You will equally be remembered for your restraint, which has been shown by hundreds of list subscribers on this issue.

"I also recommend great caution when accusing people of personal faults when attacking them for their views. When I stated my logic in opposing a certain licence requirement, one reader accused me of finding the test too hard. It turned out that the test I passed (in 1964) was actually a more stringent one than the test passed by my accuser.

"For more on this subject, read almost any of the Personal Usenet FAQs; they are probably still to be found at the amazingly descriptive address of ftp.rtfm.mit.edu. Soapbox mode off!"

Thanks Andrew. Personally, it is my view that those operators prone to "sounding off" at a seemingly annoying comment, or action, would do well to delay any replies for at least 24 hours in order to cool off. This gives time for a considered and reasoned comment or opinion, for the betterment of their own image and that of amateur radio in general. It is a well known fact that, in whatever direction mud is being flung, some will stick!

Personal derogatory comments will never appear in these columns. Those finding a need to be so involved would do better to send an e-mail to the person/s concerned and keep it off the Reflector. The majority of Reflector users don't want to hear about it or become involved.

The Eucla Operation

I had expected now to have full news of the DXpedition by amateurs of the Northern Corridor Radio Group to Eucla for the John Moyle Field Day on 20/21 March, but so far only sketchy reports.

Generally, for most areas band conditions over that weekend were atrocious, with high temperatures and little or no enhancement of signals. I worked VI6EWT, the expedition station, at 2220 on Sunday (20 March UTC) on 144.120 at 5x5. I could hear them at 5x3 on 432 but they could not hear me. By the time their signals had arrived at Meningie they were rapidly fading and did not reach Mount Gambier. They were quite strong in Adelaide with David VK5KK and Phil VK5AKK reporting contacts. From his usual mountain site, Phil apparently worked them on 50, 144 and 432 MHz.

Unfortunately for Alek VK6APK, who had been at the forefront of arrangements, he had to withdraw at the last moment from the expedition due to sudden illness. Despite his obvious disappointment, it was the wise thing to do, as Eucla is too isolated to go there in an unwell state.

New Records

By packet, John VK3KWA has advised of new record claims as follows:

Lyle VK2ALU has claimed a new 1296 MHz EME record for a contact made by VK2AMW in 1985 - probably the longest ever delay between contact and record claim!

The record is now VK2AMW - G3LTF 02/03/1985 16978.5 km.

A claim from VK6KZ and VK6BHT for a new VK6 and National 24 GHz record on 10/01/98 of 142.7 km has been processed.

New mobile records for 1296 MHz: VK3XPD/m to VK5DK/p 10/03/98 380.4 km. VK5NC/m to VK3KWA 10/03/98 388.2 km.

John VK3KWA also supplies these further details of 1296 MHz activity on 10/3 when the above records were established.

Trevor VK5NC was up to S8 at 0945. He and Colin VK5DK then went to Blue Lake, Mount Gambier while Russell VK3ZQB went portable near Port Fairy, and Alan VK3XPD went to Surrey Hills. VK5DK/p worked VK3KWA at S8, and VK3ZQB/p worked VK3KWA and VK3KLO with one watt. At 1138 VK3XPD/m worked VK5DK/p for a new mobile record of 380.4 km. At 1235 VK5NC/m worked VK3KWA for a mobile record of 388.2 km. VK3ZQB, VK3XPD, VK5DK and VK5NC also worked each other on 10 GHz.

Six Metres

John VK4FNQ says that the band has been quiet with some TEP. On 27/2 he heard HL1LTC at 0630, but faded soon after. On 3/3, between 0545 and 0641, John worked 30 JAs in districts 1, 2, 3, 4, 5, 6 and 7, with most signals 5x9.

From Scott VK4JSR: The JA DX Cluster reported that on 11/3 at 0348, Wally VK4DO worked KH7R (Kure Isl) at 5x9, for the first KH7 contact this cycle.

On 12/3 John VK4FNQ worked KH7R at 0410 3x1. John's antenna rotator is faulty so he used a vertical antenna. Also managed a 5x5 contact with KF4GMH at 0530. BYTV was in at 0345 very strong and making life difficult on 50 MHz. Also worked six JAs to 0555, so the path was there.

From Steve VK3SIX: On 12/3 from 0840 to 0901 T881Y on Palau Isl working JAs, also V73AT to JA5FFJ at 0753. 13/3: 0428 VK4APG to JH0BQX, 0520 VK4PU to JH6ETS, 1040 VK4KJL to JH0BQX. The JAs seem to be climbing over one another on 50.110 to work stations, but the above VK4s were well away from 50.110.

On 19/3 Steve VK3SIX reported the first JAs for the equinox into VK3. He worked JA1, 2 and 5 for five CW contacts between 0453 and 0640, with signals to 559. Northern TV observed from 0200 to 0700.

From JA Cluster 20/3: Stations worked/heard in JA between 0520 and 1724 included VT98LC, 9M2NK, YC0UVO, BV2SR, VR2IL, T881Y, VK8MS, VK8RAS/b, VK2FZ/4, VK4ABP/b, so there are a few active countries around.

Ron Graham VK4BRG said that on 22/3 at 0450 NH6YK in Hawaii was worked by VK4DO, VK4RO and VK4FNQ. Signals averaged about 5x5 for the duration. Both KH6 beacons (50.061 and 50.065) were audible at this time and for some 15 minutes after. Ted NH6YK left on 23/3 for Midway, where he says he will be active on six metres.

23/3: Via TEP from 0410 to 0509: VK3SIX to JA9SSB, JA9BHZ, JA2IGY/b, JH0OME, JA9SSB, JA9BHZ, JA1AUD, JH1WHS, JE1TGN, JS1KQN, JG1ZGW, JA7ZMA/b, JA7SWZ; VK3AMK and VK2QF to JH1WHS.

Gerry VK4HT reported hearing KH6HI/b 559 on 23/3 at 0640, and on 24/3 at 0800 both KH6 beacons were S1. No amateurs heard or worked.

Steve VK3SIX reported that the first true night-time TEP was observed in VK2/3/5 between 0840 and after 1100 on 25/3. Unfortunately, P29KFS remained on 50.110 from 1045, creating a huge JA dog-pile and blocking out the weaker VK3 signals. Steve worked VK2QF, VK3ALM and VK5ZBK. There were strong ten metre SSB signals from Europe also.

He also reported a massive TEP opening from 0425 to 1036. He worked JA1 to JA0 areas with more than 40 contacts, either CW or SSB, many at S9.

Included in his long list were these specials: V73AT worked many JAs as did the Hong Kong VR stations. 9M2 TV was there, plus numerous Asian TV off-sets around 49 MHz.

At 0420 Steve heard KL7/DARN 49.635 (BP51 Dual AU Radar UAA Anchorage AK 529 from 62 North) for 15 minutes. Deliberately called and worked on 50.125 but only got JA8s.

JAs were working NH2C, 9M2TO, N7ET/DU7, VR98LC. All JA beacons were audible. V73AT heard VK4RGG/b 50.058 at 0442. VK2QF, VK2XMQ, VK3AMK, many VK4s, VK5ZBK were working JAs.

At 1030 heard VK8RAS/b on backscatter. Worked Jeff VK8GF in Alice Springs by scatter mode until 1120. ZL4AAA worked JA1RJU at 0413 SSB. ZL TV at 0430. JA3EGE copied VK6RPH/b 50.065 at 0614. VK6IP, VK6ET and VK6ZPP worked JA3s.

Scott VK4JSR said that the HS1 station claimed to have been worked by some VK4s during the large opening, was in fact DS1, a prefix for Korea. He said that amongst the melee on 50.110 yesterday these countries were heard - JA, VR2, KF4, DS1, and FK1 (backscatter from TEP).

John VK4KK said his list consisted of KF4, KH7, KH6HI/b, V73, DS1, VR2 and JAs, all from 0300 UTC onwards.

Plans for Autumn

Steve VK3SIX/KL7SIX is to return to Alaska on 21/9/98. He plans to concentrate on working Europe over the Pole and down to Oceania in December. Station and antenna will reflect this pursuit. Will be either modifying HF amp or looking for a suitable (1 kW) local amp. Antenna will be modified equipment already available locally. Would like some ideas and strategies as to how to do this and needs e-mail addresses and telephone numbers from EU and VE stations. Steve Gregory - Postal: HC 33 Box 2966 Wasilla AK 99654-9720; Phone: 1 907 373 5435. 73 and feel free to pass this on as I will need the co-operation of all concerned to

make this work, I just hope the Cycle is kind to us all.

Steve VK3OT provides the following list courtesy of Mike Greenway; it is the list of stations who worked P43AS during the opening on 26/3/89. QSL cards are available on production of log entry and two IRCs from Thomas Greenway K4PI, 4055 Kings Highway, Douglasville, GA 30135.

VK2ASZ, VK2BA, VK2FLI, VK2JSR, VK2MQ, VK2QF, VK2VC, VK2XJ, VK2ZXC, VK3AKK, VK3AMQ, VK3AMZ, VK3AUI, VK3AAU, VK3AZY, VK3CDI, VK3DU, VK3DUQ, VK3DUT, VK3KAQ, VK3LK, VK3NM, VK3OT, VK3TAF, VK3WN, VK3XQ, VK4BRG, VK4DDG, VK4DK, VK4DMI, VK4KJL, VK4NJO, VK4ZAZ, VK4ZNC, VK5AMK, VK5AYD, VK5KK, VK5LP, VK5NC, VK5NY, VK5ZDR, VK5ZK, VK8GF, VK8ZLX, ZL4KB.

Juan P43AS is now a silent key and Tom has kindly offered to make up some cards for those who need them.

There were some contacts made with VK/ZL later in the weekend and he also worked a number of North and South Americans and Europeans; so here is your last chance to confirm this station if you haven't done so.

Two Metres and Above

Gordon VK2ZAB reported that propagation on two metres SSB was enhanced on 10-11/3 by the presence of an intense coastal duct. At 0740 on 10/3 signals were 5x9+ both ways between Warren VK3BWT at Mallacoota and VK2ZAB (outer Sydney) over the 450 km path. Warren could also hear the VK7 beacon, but no contacts. VK2ZAB could not hear the VK7 beacon. Later in the evening Sydney stations VK2FLR and VK2DXE (2 W) worked VK3BWT.

VK3BWT later worked Andrew VK7XR and was in contact with him the following morning, about 2100 10/3, when Jack VK2AAS/p at Molly Mook heard VK7XR. So far this is as far north as the VK7 signals have been heard. That evening about 0915 (11/3) VK3BWT worked Ray VK2BRG at Coffs Harbour with 5/5 signals over the approx 850 km path.

At about the same time VK3BWT also worked Ross VK2ZRU in Sydney with 5x9 signals both ways. However, Guy VK2BBF at Springwood, 60 km north west from Sydney, could hear VK3BWT at S1 on the direct path. Turning his antenna from 193 to 105 degrees resulted in a 5x5 contact with VK3BWT.

This phenomenon was not evident to Keith VK2JY at Mt Riverview which is in the same general area as Springwood, although a few kilometres closer to Sydney and somewhat lower in altitude. Keith worked VK3BWT

with signals rising to S9 shortly after the VK2BBF contact.

It appears that the duct was low and hugging the coast. Guy was unable to access it directly but achieved a nearly 90 degree bend in the propagation path by scattering (reflection) from a large object which was in the duct. Candidates for this would include the Sydney Harbour Bridge and the Centre Point Tower, both on the 105 degree bearing.

At 1127 on 11/3, VK1ZQR was 5x8 in Sydney to VK2ZAB. Bob in Canberra is behind a hill in relation to Sydney and signals are usually close to the noise level. At 2100 on 11/3 VK3BWT was still 5x9 at the VK2ZAB location. He is normally S2-S3. There may be more to come.

From Wally Howse VK6KZ: Wally Green VK6WG reported that on 18/3 there were strong signals on 144 and 432 MHz during the day, evening and next morning (UTC) from Mt Gambier and western Victoria. He worked Col VK5DK in Mt Gambier and a number of VK3s. No sign of signals from Adelaide area in Albany. No signals on 144 MHz from VK3 or VK5 in Perth.

In conjunction with the east-west signals, good signals prevailed across Bass Strait on 18/3. According to Ron VK3AFW, on two metres, between 2110 and 2130, Andrew VK7XR was 5x9 as far north as Wedderburn to Des VK3CY. Six metre signals also strong. John VK3KWA intermittently copied VK7XR on 1296 MHz but no contact made.

Gordon VK2ZAB said that resulting from his last posting about ZL two metre beacons being heard in Sydney, the following contacts took place: 20/3: VK2BBF 1900 ZL2VAL, 1904 ZL2TAL; VK2ZAB 2101 ZL2TAL, 2120 ZL2VAL, 2127 ZL2TE and 2346 ZL1IU. Signals from S3 to S1.

This may be as late in the season as we have ever seen a duct across the Tasman, at least in VK2. However, on making this comment to Nick ZL1IU, he replied that it may be so but that on 9/4/94 he worked into VK4 via a duct.

John Moyle Field Day

Ron VK3AFW said a number of VK3 Field Day portable stations were out and about; 50.200 was busy with stations QSYing up. 144.100 and 432.150 also very busy with some QRM on both.

Several new grid squares were active, but no signals coming from the west. Ron said he worked the portable station at Eucla but (hush!) on 20 and 40 metres. Ron is off six metres temporarily - his antenna has blown down! What! Again Ron? ... VK5LP.

Norm VK2XCI, the Voice on The Edge of The Outback, at Mount Hope, comments on the John Moyle Field Day: "... slightly

more successful field day than last, but once again physical conditions were very tough. After four warm days, cool nights and calm weather, Sunday 22/3 was hot, windy and dusty! Started at 0600 local and by 0800 it was 28 degrees C with a strong gusty NW wind and much raised dust. I gave up at 0930 local ... 38 degrees C and 35 knots ... when the ute door blew shut and jammed my fingers. Enough already!

"Never mind, it was worth it. Thanks to the VK1 mob who finally came good. I could hear the Nimmitabel two metre beacon all morning but no sign of VK2TWR. Where were you Rod?

"So I now have just less than a year to build an air-conditioned wind/water/dust proof portable station with a self erecting mast, hot and cold running water, comfy bed and a well stocked fridge, all mounted on a 4WD with 240 V generator set, GPS, Satphone and cable TV! There's work to be done."

Ross VK2DVZ said that the Taree and District AR Club Inc participated in the 1998 John Moyle contest, in the 24 hour section. They used Blue Knob, a vantage point over 1000 metres ASL with a 360 degree view and takeoff. Three members made the trip.

At first they had problems with wildly fluctuating 240 volts AC from the alternator, in turn causing the 12 volt battery charger to demand a respite and certainly the solid state equipment didn't like it. Replacing a faulty 12 volt battery brought relief to all, equipment included. The alternator ran without fault for the full 24 hours.

"We worked HF DX until the early morning, then after four hours sleep we were on air before dawn.

"We watched the very visible inversion layer out over the coast, some 50 km to the east on both the Saturday afternoon and Sunday morning, but to no avail - no ZL signals to be heard at our prime location, despite all the reports from up and down the coast.

"Interim results about 4200 points. HF: about 90 contacts; 144: 137 contacts - about 55% exceeded 150 km, therefore 30 point contacts; 70 cm: 78 contacts - about 48.5% exceeded 150 km, 30 points each.

"On VHF, our most distant contact was 702 km with Warren VK3BWT at Mallacoota, twice on two metres. We worked Rod VK2TWR on a few occasions on both 2 m and 70 cm at 654 km (one watt both ways on two metres for one of the contacts was still about S3 at my end, same at Rod's).

"We were very pleased to work VK2EU/p SE of Canberra, in the ranges beyond Captains Flat, and VK2LO/p at Murrumbateman, together with (my first) VK2XCI/p near Mount Hope.

"A G5RV antenna used on HF, a 12 element DL6WU design Yagi on SSB and a Slim Jim for FM on the 2 m band, and on 70 cm we used a 15 element DL6WU design Yagi for SSB and a little eight element Maspro Yagi, vertically polarised, for FM. 80 watt solid state PAs on each of the 2 m and 70 cm bands.

"The weather was very hot on the coastal plains, but very pleasant on Blue Knob. Out came the windjackets and long pants for the night session, it blew all night - all the while it remained a hot night down below us on the low country.

"We worked stations in an area bounded by Coffs Harbour to Mallacoota, Captains Flat, Canberra, Tottenham, Mount Hope and across to Gunnedah. I heard one VK4 very weakly in the noise, but not positively identified. Coffs Harbour was the cut-off point to the north this year."

The Western Australia Journey

Alan Devlin VK3XPD sends details of his recent sojourn into Western Australia in the hope of exploiting the often enhanced signals during February.

To summarise, "The event was a dismal failure for the effort expended. There was simply no microwave propagation across the Great Australian Bight during the four weeks I was in VK6. There were a couple of brief two metre openings, but the best that I personally achieved was an 1800 km contact on 23 cm from the QTH of Bill VK6AS in Esperance to Trevor VK5NC in Mount Gambier. Apart from that there were several other short range contacts in VK6 on 2, 3, 5 and 10 GHz. One amateur is Wally VK6WG who at 87 years has just completed his 5 GHz unit with a little help along the way. It was also great to meet up with those other amateurs in VK6 with similar interests - thanks to Wally VK6KZ for making the arrangements."

Aircraft Enhancement Net

Chris VK1DO sends the following information: "Due to the astonishing level of activity out of VK3, VK1 operators believe we are congesting the 144.200 net, probably preventing more significant contacts of the 800 kilometre plus variety and generally slowing up weekend operation. The rapid fire nature of the relatively easy VK1 to VK3 contacts, together with the veritable plethora of VK3s, tends to result in the preclusion of Sydney to Melbourne attempts.

"As of the weekend, Saturday 14/3, we will only operate on 144.200 to beam north and we will be looking for VK3s on 144.250. The fifty kilohertz separation ought to permit stations in the same metropolitan regions,

within reason, to co-exist with contacts simultaneously on both nets.

"I hope that by freeing up 144.200, many more contacts that might occur between Sydney and places north, and Melbourne and surrounds might be facilitated. The variations in path over these longer distances are more complex and not only need more effort, but perhaps the acceptance of those on the net of the more involved nature of establishing a contact.

"Suffice to say, I hope this experiment can be supported by all operators in an aim to benefit everyone. Please remember to inform your fellow operators to ensure their efforts are appropriately directed and furthermore, they do not conclude from observing 144.200 that there are no VK1s and conversely, look more energetically and patiently for distant signals, etc."

Apropos the above, Gordon VK2ZAB writes: "The plan was put into effect on Saturday 14/3 so it has been in operation for two days at this writing. It calls for VK1 stations to use 144.25 MHz and for VK2 stations north of Canberra to use 144.2 MHz as usual.

"It worked fine for me. Although I was not overwhelmed by a plethora of VK3s clamouring to work into Sydney, I did contact a few with somewhat more ease than had had been the case previously.

"The potential to make more VK3 contacts is certainly there as the Mt Anakie beacon is frequently audible here for periods of many minutes at levels up to S3 from 8 am until after 9 am local time.

"It may be that some people do not know that aircraft reflections do not peak for location A at the same time as they do for location B. Therefore, the procedure is to point your beam at the location you wish to contact and, if you can't hear other stations, call, call, call. Frequent short CQ calls.

"The aircraft will fly into the area of mutual radio visibility and contact will be made. Do not point your beam where you think the aircraft may be and do not rely on it being there at the same time as it was last week. Remember, if you can't hear anything, call."

Closure

Closing with two thoughts for the month:

1. Old age is when you know all the answers, but no one asks you the questions and,
2. Some people make it happen, some people watch it happen and some people say, "What happened?"

73 from The Voice by the Lake.

Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:

B (Brian)	DARRAGH	VK2BR
H S	WILSON	VK6HW
L W (Len)	EDWARDS	VK7LE

B L (Bruce) McCubbin VK3SO

This well known Melbourne identity was first licensed in about 1936. He had been an active member of the Eastern and Mountain District Radio Club and it was a rare occasion when he did not attend a meeting.

After Bruce announced plans to move interstate, he was made a life member of the EMDRC in October 1997 for long and active service.

His brother-in-law, Bert King VK6EK, in assisting the club's committee to research Bruce's history, provided an interesting insight – an edited version follows:

Bruce was born in or near Daylesford on 21 May 1916, and his family moved to Fitzroy when he was about five years old.

One day he found a battery and experimented, first making sparks with a piece of wire, then light with a globe, later acquiring a Ford ignition coil and his interest in electronics grew.

In his early working life he was employed by several local radio firms, including Radio Corporation in South Melbourne which later became Astor.

He began a long career at the State Electricity Commission starting with stamping serial numbers on meters, and then went on to testing, calibration and reading of meters.

Following the outbreak of World War II he joined the RAAF reserve as a wireless operator and rose to the rank of Warrant Officer.

After military service he eagerly resumed his hobby of amateur radio.

He managed the WIA Victoria office, when it was in Brunswick Street, Fitzroy, and for

many years served with distinction as a dedicated and knowledgeable volunteer.

Personally, when I last saw Bruce at his Burwood home just before Christmas, he was in his radio shack with a Morse key at one end of the bench, and a computer at the other.

I feel this memory best describes a gentleman who was equally at ease assisting a youngster on a repeater, as pounding brass with a long standing friend half way around the globe.

David Williams VK3KAB
Vice President,
Eastern and Mountain District Radio Club

Cyril Eakins VK6CN

VK6CN was one of life's quiet achievers. These obituaries often record life histories of well-known amateurs, prominent in the WIA, DXing, DIY and more. Cyril's callsign seldom appeared. Yet, for nearly fifty years he built finely crafted amateur gear till, like most of us, he fell for the charms of factory made sets. Even so, he continued to make those little ancillary items one couldn't buy in shops; not only for his own projects, but for many hams, family members and neighbours.

Cyril's training in pharmacy earned him a valued place in the army in WW2. At war's end he went back into "civilian practice" and for some years ran his own pharmacy at Kellerberrin. In recent times he took an interest in computers, packet and the Sunday morning 80-metre WIA News relay.

His work and a natural love of tidiness made him a perfectionist which showed in his hobbies, amateur radio and metalwork.

When you're a caring husband, father and friend and you spend a lot of your precious spare time doing things for others, there's not much time left to become famous. But well-loved and respected he certainly was.

QRT 25 March 1998. Sincere sympathy to Peg, Jill, Rex and families.

Harry Atkinson VK6WZ

Len Edwards VK7LE

We are sad to record the passing of Len Edwards, aged 81, one of Australia's radio pioneers, peacefully at home on Friday, 13 March.

Len, born on 29 September 1916 in Hobart, started out in the days when the Post Master General's Department provided technical facilities for the ABC and electronics personnel were known as mechanics.

During World War II, serving as war correspondent with the ABC Mobile Radio Unit in New Guinea Australia and, in 1946 in Japan, Len's invention of new lightweight recording equipment made it possible to record live action at the front for the first time. Len recorded from barges, sailing ships,

corvettes, bombers, travelling jeeps, and right in amongst the fighting, surviving air raids when his equipment was less lucky.

After the war, Len designed high quality monitoring receivers for broadcasting stations throughout Tasmania, and the antenna/earth systems and internal receiving and transmitting equipment layout and interconnection for Australia's frequency measuring and monitoring station at Quoin Ridge, Hobart.

Privately, he found time to build and operate the first amateur SSB transmitter in Australia, track the first satellites and conduct research into effects of meteor ionisation on broadcast transmissions with Grote Reber, founder of Radio Astronomy.

His great love of the sea led him to found the Geilston Bay Boat Club in 1968. Many will recall him as a familiar figure at the helm of the *Marie Frances* or calling in to Hobart Radio.

Not content with retiring in 1973, his desire to build a better HF antenna for his boat created a new business, Moonraker Australia, where Len was active in research and development until the last.

He is survived by his wife Marie, son Christopher, and daughter Suzanne. His inventive spirit and kind nature will be sadly missed.

Christopher Edwards

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Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

Comment on "An SSB Product Detector for Boat Anchor Receivers".

(published on page 7 of March Amateur Radio)

I would not in any way criticise Mr Odell's quite delightful method of achieving SSB demodulation. His article is excellent.

But, I would question "WHY?"

I have been involved in so-called "Boat Anchors" on and off for some 40-odd years, and have repaired, restored, and operated many such devices, RA-17s in particular. In my opinion, the Racal RA-17, in its various models, is a good candidate for being one of the very best valve HF communications receivers ever, and when operated correctly, one of the best performers of all "Boat Anchors" for receiving and resolving SSB signals.

The SSB procedure, as I am sure you are aware, with the RA-17, is as follows:

Set up the receiver for the frequency of interest.

Set the IF bandwidth (selectivity) to 3 kHz. Turn ON the BFO.

With the BFO tune (note) control, offset the BFO by 1.5 kHz ABOVE the IF centre frequency if copying LOWER sideband, and BELOW the IF centre frequency if copying UPPER sideband.

Do NOT make further adjustment to the BFO tuning, unless going to the opposite sideband. All further adjustment to resolve the signal is done on the main receiver tuning.

Check that the AVC response is set to LONG. Tune the receiver normally across the band, and you will find that it behaves just like your modern solid-state rig.

The above assumes that the radio is correctly aligned, particularly the IF, detector and AVC. I suspect Mr Odell's RA-17 has a problem somewhere.

The above technique works with all receivers, although with varying success, as many older types, as Mr Odell correctly states, just do not have sufficient BFO injection; a

prime example being the immortal RCA AR-88. When this problem is encountered it is necessary to reduce the RF gain in order to cope with strong signals. This can also lead to the need to turn OFF the AVC.

A further complication with some receivers is if they switch, on some bands, to opposite-side local-oscillator injection, thus inverting the BFO frequency requirement. And, as well, there is the lack of frequency stability with many older receivers.

But a properly set up RA-17 does not suffer from these problems. Yes, Racal made SSB and ISB adapters (I have owned and used them) but for the type of operation that we, as hobbyists, are involved in, it just isn't needed. In fact, it seems they are, and were, an unnecessary complication.

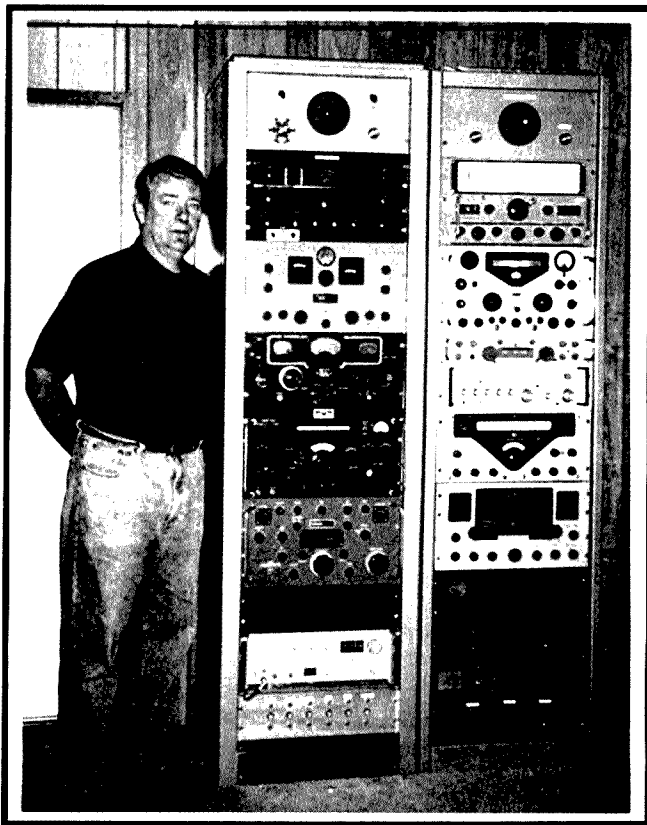
Speaking with ex-military operators, who spent many long hours monitoring other folk's signals, the general comment is "Didn't need it - didn't use it".

Surprisingly, a couple of other British "Boat-Anchors" are excellent SSB demodulators; the Murphy B40D and the GEC BRT.402 series (on the lower HF frequencies) come immediately to mind. The well-known American Collins 51J-4 and R-390-A are not quite so tractable; but, again, using the above technique, they will do the job.

Incidentally, the story of the RA-17, as the first commercial use of the Wadley Loop, is a fascinating and much misunderstood tale.

We must never forget that the Wadley Loop, invented in wartime England by South African, Dr Trevor Wadley, was the first practical self-correcting, drift cancelling loop and, as such, was the seed invention which led, via a tortuous path, to the phase-locked loop, and all we do in communications today.

And please, never call it the "Barlow-Wadley Loop". Barlows in South Africa simply used the technique in that very nice portable receiver and popularised it, as that was the first (I think) civilian/domestic use



John VK6XJ alongside a rack-mounted part of his collection.

of Dr Wadley's clever little circuit. Then Kenwood, and Yaesu, got hold of it, ie R-1000, FRG-7, FRG-7000 et al, all Wadley Loop receivers and you know the rest.

Again, well done Mr Odell, but I wonder if your RA-17 is not performing quite as it should?

John Tuppen VK6XJ
PO Box 522
Mundaring WA 6073

ar

You're Never Too Old

Congratulations to British amateur Les Breeze 2E1FXS who, at the age of 92, has become the oldest person to pass the five words per minute Morse Test. Les, who is blind, was assisted in his task by his wife Doreen who, though not an amateur, learnt the Morse characters in order to help her husband. Les has an HF rig specially adapted for the blind, which is fitted with a voice synthesiser to announce the frequency in use. He now plans to gain the full class A licence.

(News courtesy of the Radio Society of Great Britain)

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Andy Thomas, South Australian

I query and take issue with the wording used by the Guest Editor Jim Linton VK3PC in his editorial comment in *Amateur Radio* April 1998 where he uses the term "SO CALLED" South Australian Astronaut in referring to Andy Thomas VK5MIR.

The rest of the editorial is well written and indicates the excitement that obviously exists even outside of his "home state".

Andy is very definitely a SOUTH AUSTRALIAN.

He was born in the Memorial Hospital, North Adelaide, (as was also his father) in 1951. He attended St Peters College Adelaide and also the Adelaide University.

Andy is the Great Great Grandson of F G Waterhouse who was the first curator of the South Australian Museum. On his mother's side he is related to the well known explorer Giles and was descended from original European settlers who arrived in the state on HMS Buffalo in 1836.

In 1996 the Adelaide "Advertiser" newspaper voted him as South Australian of the Year.

Andy is an Australian citizen although he does carry dual citizenship which is a requirement as a result of his chosen career.

His family are resident in Adelaide and, as his father succinctly put it, "Home to him is Adelaide."

I believe that he can truly be said to be a "South Australian Astronaut", not merely "so called".

Ian J Hunt VK5QX
8 Dexter Drive
Salisbury East SA 5109

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Future of Amateur Radio Service

Firstly, let me thank all involved with the production of *Amateur Radio* magazine; it is, in my opinion, second to none!

Much has been reported of late about the future of the Amateur Radio Service and I wish to share a few of my collective thoughts on this issue with others. Not having (or really wanting) Internet access, I am unaware of what is reported there (on the 'net) so *Amateur Radio* letters are by no means a second best.

The old phrase "Use it or lose it" immediately comes to mind. If we as amateurs want to demonstrate to the ACA (Australian Communications Authority) that all our band allocations are justified we must populate them with contacts!

Some simple ways of doing this, as I see it, are:

Get off the Internet, it's a bore!

Read the "Amateur's Code" in your ARRL handbook.

Give the passer by a contact as he/she calls on your local repeater. We all like the courtesy of a reply as one moves through another area in the mobile.

Give away your old redundant equipment; eg, that unused two metre rig in a box

somewhere will be a contact for many on your local repeater in the hands of some less fortunate operator than yourself.

Sell your redundant gear to support DXers. Remember DXpeditions are no glory trip but a big impost on DXers' hip pockets. So, if you want a nice QSL for that far off Island, help them put it on the map, perhaps for the benefit of others if you have worked it previously.

Support your local club and the WIA. In this time of repression of "Unionism" the group approach is the only voice that will be heard by the ACA when it comes time to sit around the negotiating table.

Operating a minor sideline business to a farm, I have run a promotion that has joined new members to the WIA. Simply purchase a certain value of goods and receive a membership form with cheque for one year's membership.

I challenge other businesses to do the same, especially those that have a "vested interest" (as mine does not), in the survival of amateur radio.

73 and good DX in cycle 23.

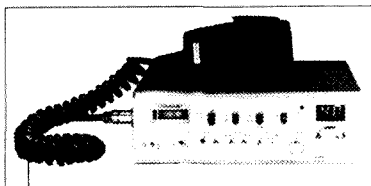
Neville Mattick VK2QF

"Blackwillow"

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ar

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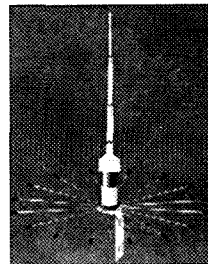
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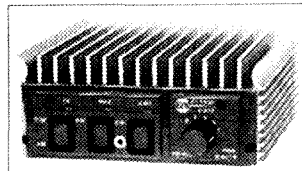
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WIA Divisions News

VK2 Notes

Elections Over!

Most members of the NSW Division should know by now the outcome of the VK2 Division elections which culminated in the AGM held on 18 April. For the elected Board, many discussions are underway as now is the ideal time to consider our future, in the NSW Division anyway. As you probably are aware, there were 10 nominations for the VK2 Council and next month I will give you the full line-up, names and assigned portfolios of the Directors. You can be sure that the same dedication and attention to members needs will be delivered during the coming 12 months.

Federal President

Congratulations to Peter Naish VK2BPN who was elected Federal President of the Wireless Institute of Australia. It is believed that this is only the second time a VK2 member has held the position in the 88 year life span of the Institute. The last occasion was Bill Moore VK2HZ who served in the position in the period 1935-1938. Peter tells us that he is "delighted and honoured to have been elected to the position" and will give of his best. Certainly, we know that is true, Peter! I am currently working on a full profile of Peter for the next edition of *Amateur Radio*. Once again, Peter, congratulations on behalf of the VK2 Division.

Annual Report

Congratulations and a big pat on the back for the people involved in the production of the VK2 Division Annual Report which went out with the ballot papers prior to the election. The document has received many favourable comments from the membership for its compilation, design and production. Those who were involved will know who I am referring to, so please, take a bow.

Trash & Treasure

Council has made a decision that there will be two regular Trash and Treasure events held at the Dural transmitting site, north-west of the City of Sydney. It was figured out that, while people really enjoyed going along to

these special days in the beautiful bush surroundings of the site, we needed to set a regular timetable so people would know when the Dural days would be held for the coming 12 months. The Dural days will be held in March and November, with the other four events being held at Amateur Radio House at Parramatta.

Just a reminder that Trash and Treasures are held on the last Sunday of odd-numbered months of the year. If the date is altered for some reason, for example Easter, the information will be mentioned in the VK2 broadcast or through the VK2 Notes.

VK2RSY Beacon on 23 Centimetres

The 23 centimetre beacon at Dural, at the time of writing, is out of service while consideration is given to frequency stability. There is a lot of multiplication from the crystal to the output stage, based on technology current at the time of its construction.

If you are interested in the frequencies above 23 centimetres, and as VK2RSY is also licensed for that part of the spectrum, we are inviting you to express your willingness to provide and construct beacons at 13, 9, 6 and 3 centimetres. Please contact the Dural Committee via the Divisional office at Parramatta.

Change of Date for the Conference of Affiliated Clubs

On the recommendation of Affiliated Clubs Officer Ken Westerman VK2AGW, it has been decided that the Affiliated Clubs Conference for 1998 will be held at Amateur Radio House at Parramatta on Saturday, 13 June 1998.

This has changed from 16 May and has been necessary because it was originally scheduled too close to the AGM and the first meeting of the newly elected Council. If you wish to attend, agenda items and names of intended delegates are required at least two weeks prior to the conference. There will be lunch and dinner at a moderate cost, which will be advised. Coffee and tea, plus biscuits, will be provided. For further information, contact the VK2 Divisional office. The conference will begin at 0900 local. Please arrive at least 15 minutes prior to this for registration.

For more information, contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor, just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page. If you are addressing e-mail to the office, please

do so at vk2wi@ozemail.com.au. There'll be more to report next month, but if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777 or by e-mail to dthom@penrithcity.nsw.gov.au.

David Thompson VK2NH

VK5 and VK8 Notes

Still That Time of Year

As I write before the VK5 AGM, it is not possible to advise who will be on Council for the coming year.

A full report on the Federal AGM has not yet been provided to Council; but some details are available.

Firstly is the appointment of Peter Naish VK2BPN as Federal President. Peter has been a Director and Secretary to the Federal body and is experienced in the workings of the organisation.

I spoke with him, extending congratulations of the Division on his election, and told him we look forward to renewed activity on a Federal basis, particularly that members in general are kept well informed as to what goes on within the organisation. I expressed my personal concern that the WIA should be seen as being honest and open in its activities.

My feelings about this are well known. Recently, a South Australian Judge, John Sulan, commenting on a case said, "Unless the public and business can trust each other the whole fabric of our society is at risk". I believe the same applies to any organisation and its members. It seems this has not always been the situation in the WIA.

A letter was received from our unsuccessful candidate, John Nunan VK3IC, thanking us for our confidence in proposing him for the position. We are grateful for John's agreement to stand for election and certainly should keep him in mind for any future position.

Martin Luther VK5GN was elected as one of the Federal Directors. He is recognised as being very experienced in matters of management. We look forward to the results of his informed and effective methods.

Details of other appointments made at the Federal level will be provided to the coming Council Meeting, the next General Meeting and through the Sunday broadcast facility.

Exploits of Andy Thomas

As Andy Thomas VK5MIR is South Australian born and bred, we have been keeping a close interest in all that he does.

It is interesting to note how contributions can be made to the community in general through amateur radio activities. Here are

details of one such contact involving Andy VK5MIR.

This was with Wolf VK5AXN who is a member of the South Australia Police and involved in communications in that organisation.

On a regular basis, an operation has been run in this state involving taking groups of young offenders into the Flinders Ranges area to provide them with a unique experience.

Wolf thought that Andy Thomas would represent an extremely good role model and if he could have Andy speak to them it would be an occasion they would never forget.

Here is the information sent by packet radio to brief Andy on MIR.

"Operation Flinders Foundation is a project to rehabilitate young offenders. They are young boys and girls aged 13 to 18 sourced from around the State. They walk 120 km over 8 days carrying all supplies. Each group has a Police or Army leader and 2 counsellors.

"On the way they carry out specialist activities such as abseiling with Police STAR Division, raft building and meeting local Aborigines. This exercise includes 7 teams with a total of 58 kids. There are 35 field staff which includes Commander, team leaders, councillors, communications by SAPOL Radio Section, medics and cook

"Headquarters is at Moolooloo Station and the Operations Area covers 250 square kilometres. At the time our contact takes place, the kids will be feeling very sore and tired and some will want to quit and go home. This will probably be the hardest thing they have done in their lives. At the conclusion of the trip about 75% of the young people will make a change to their lives. Some won't want to leave.

"It is planned to make contact with you from a position next to the cairn which commemorates the epic journey made by John McDouall Stuart and his brave men. The cairn names the explorers and especially your Great Great Grandfather, F G Waterhouse.

". your voice will be relayed to the teams as it happens. A few words of encouragement to the kids and perhaps some advice on how to face and deal with adversity might be worthwhile. I think the impact of your voice coming from MIR would be very significant for the kids. (It will not be possible for the kids to reply)

"Your path over us takes about 10 minutes. Your Great Great Grandfather took 9 months to travel to the North and a further 5 months to return home!

"Moolooloo was historically significant in that it was owned by the Chambers Family who were primary sponsors of the expedition. Moolooloo was the staging post for the trip

and Stuart and his party spent a deal of time preparing for the trip and resting.

"This radio linkup will bring together in a real sense the expeditions of 1861-62 and the space flight of 1998. It will have a major impact for the young people struggling physically and mentally with this most arduous journey.

"Incidentally, Stuart and his party left Moolooloo on 21st of January, 1861. You left on your journey onboard MIR on 22nd January, 1998, 137 years and one day later"

Andy spoke to those listening through the relay stations spread over the area of the exercise. He told them about difficulties he had experienced where he had wondered if it was all worthwhile. I have not yet heard all that Andy Thomas said, but understand that it was a very motivational effort. He reinforced the fact that striving to attain a goal is worthwhile.

Andy's Great Great Grandfather was a member of McDouall Stuart's exploration party as a naturalist.

I end these notes not knowing whether I will be in the same position on Council after the AGM or continuing with these notes in the future. I hope that what I have written during the last 12 months has been of interest.

My very best wishes to you all.

Ian Hunt VK5QX

VK6 Notes

Federal Convention

Congratulations to Wal VK6KZ on being selected as a new director of the WIA. I fully expect an era of enlightened leadership from HQ, and Wal's progress will be followed with some interest from the West, I'm sure! As a consequence, Wal will be resigning from the positions of VK6 Federal Councillor and VK6 President. News of Federal appointments, etc will be detailed elsewhere, but there have been some welcome outcomes on the various proposals put forward by VK6 Division.

New Proposals

1. In the April Notes, Chris detailed a proposal for the creation of an examination-free licence. It should be mentioned that the VK6 Council has not yet endorsed such a proposal and will be giving due consideration to it at the April meeting. It is likely that a possible route to achieving this objective will be through the updating of the current exemptions for the theory examinations. All those in favour, please attend!

2. There has been an interesting proposal posted to the vk-vhf e-mail reflector. The WA VHF Group is pushing the following position: "That the WIA seek from the ACA.

extension of operating privileges for Novice Limited and Novice licensees, so that they may use all modes currently available for HF Novice operation (in particular SSB) in the additional frequency bands 144.050 - 144.400 MHz and 432.050 - 432.400 MHz". A small part of the justification offered is: "Novices (and Novice Limiteds, in particular) are unnecessarily inhibited from developing expertise in the use of SSB, and weak signal work, on VHF/UHF. This will be particularly frustrating for newly licensed Novice Limiteds in remote areas. In many parts of the country, activity on the 'low ends' of 2 m and 70 cm could do with a boost, benefiting other licence classes as well".

And further: "From having spoken with a number of young UHF CBers, it is apparent that there is considerable interest among them in working tropospherically enhanced paths." Also: "DXers are not catered for by the current Novice Limited licence".

Speaking personally (and admittedly as one who lives just out of reach of the City repeaters), I have to say that this is one of the most enlightened proposals I have come across in some years. If endorsed, it has the potential to be responsible for recruiting many new amateurs to our ranks. As such, I believe it deserves our full and immediate support.

Operating

I am overjoyed to report that recently I was lucky enough to talk to Dr Andy Thomas VK5MIR three times in three days. On the last occasion I made a mobile contact while I was driving home with the weekly shopping! Andy was easy to talk to and quite chatty; certainly he seems to enjoy talking to Australians. Give it a go before he comes down!

On a sad note, Don Graham VK6HK has advised that there is another silent key. Cyril Eakins VK6CN died on 25th March after a period of ill health. Our sincere condolences to all family and friends.

From the Minutes

Feb Meeting: Conference of Clubs. Consensus was that this meeting was well worthwhile, and the action points flagged in the Conference minutes, are proceeding. On a negative note, the comment was made that it was a pity that there had not been more participation from the country.

Mar Meeting: There had been a summary of 38 motions to be presented to the Federal Convention, distributed on the packet network and on the News Broadcast. There was some discussion about the representation of Clubs in feeding matters for Federal attention.

Reports: The Div was still in the black, but the Club Conference expense had temporarily

Update

Corrections to previous issues of
Amateur Radio magazine

A Geomagnetic Storm Detector

(published on page 9 of *Amateur Radio*,
March 1998)

The author of this interesting article, John Moen VK2KA, has pointed out some corrections to his published article.

On page 9, column 2, line 3, "Lindstadt" should be "Lindstad".

On page 10, Fig 1, the solenoid voltage "+6 V +/- 0.6 V" should be "+6 V +/- 6 V".

On page 11, column 1, line 2, "trimpot R1" should be "potentiometer R1".

On page 11, Parts List, Power Supply, "Apollo sealed lead acid batter (gel)" should read "Apollo sealed lead acid battery (gel)".

Also, in the parts list, the wattage of resistor R5, marked as 1.0 W, is not critical.

A Short History of Electronic Communication

(published on page 19 of *Amateur Radio*,
April 1998)

The author of this informative article is Rex Newsome VK4LR. We apologise for the accidental omission of his name from the article.

A Six to Two Receiving Converter

(published on page 8 of *Amateur Radio*,
April 1998)

Peter Parker VK1PK, the author of this article, advises that the details of L4, which were omitted from the article, are: 4 turns close wound, 2 mm above L3 on 1/8 inch slug-tuned former.

Peter also advises that the pin layout diagram for the BF891 should read "(Top view)" rather than "(Bottom view)".

It might be a good idea to correct your copies of the March and April 1998 issues of *Amateur Radio* now. ar

treasurer, John Klop VK7KCC from Ulverstone in the north-west; both new Councillors plus two others, John Bates VK7RT from the South and Tim Holloway VK7TIM from the North. The three branch Presidents, David Spicer VK7ZDJ, Allen Burke VK7AN and Mike Jenner VK7FB become Vice-presidents with changes in many of the ex-officio positions.

I must thank all members for the confidence they have shown in electing me for a further year to the presidency. I promise I'll work hard to earn that confidence. To the hams that are no longer Councillors, and to the hams that are no longer ex-officio members, I say a big thank you for your work on behalf of the whole Division.

Peter Stackpole VK1RX, from the Canberra Australian Communications Authority, and his Tasmanian counterpart Ian Fletcher, did a great job as our guests. We devoted one and a quarter hours to a question and answer time after the annual meeting. With both these fellows amateurs in their own right, and knowing how amateurs think, it made for a lively discussion.

The dinner was a wonderful wrap-up for the day. A "beaut" meal, very good value too, with Peter Stackpole in fine form tearing up the speech prepared for him by his speechwriters in Canberra and going "off the cuff".

The door prize of an Icom tri-band handheld, generously donated by Icom through the good offices of their main Tasmanian distributor, Marcom Watson, was won by Phil VK7PU. The homebrew competition was won by Brenton VK7JB with a brilliant satellite dish set-up; while the ladies craft homebrew competition went to Jo Payne with an absolutely beautiful homespun wool jacket.

What a night, and a credit to the two main organisers Allen VK7AN and Barry VK7BE. The north-west branch is going to have to pull a big rabbit out of the hat next year to beat THAT day. We'll do it though - just wait and see!

I had a great deal of satisfaction in presenting Bary Hill VK7BE, our retiring secretary, with the 1997-98 "Meritorious Service" award. Bany, with his dedicated and meticulous work as secretary, will be a hard act for anyone to follow.

To those that didn't come, it was your big loss; we had a ball!

Ron Churcher VK7RN ar

depleted reserves. No new membership applications had been received for the past month. The transmission of the "AR Newslines" relay was discussed. There was consensus that the new time of 0030z should be tried after suitable advertising. The transmission would also go out on 3560 kHz. WICEN had held its first meeting at the new venue at Scout Headquarters in Murray St, Perth. WARG appealed for any information about possible new repeater sites. WAADCA advised that problems with the link for VK6DLX were due to the use of a temporary antenna. The VHF Group issued an appeal for assistance in obtaining beacon sites at Augusta and possibly at Exmouth. The Hills Group had offered the ATV Group a possible permanent site for the ATV repeater.

Other Business: A graph was shown demonstrating the trend in membership numbers. If the trend continued there would be no members by 2010. The need for a campaign to attract younger people was stated. It was suggested that there was an equal case for targeting, say, the 40 years old group who had settled down and were looking for a hobby interest. It was pointed out, in support, that the average age of those attending the current training course was about 30 years.

Chris Lowe VK6BIK

"QRM" News — VK7 Notes

In this, my first contribution to this section, I must, at the start, pay a big tribute to our retiring correspondent Robin Harwood VK7RH. Robin has done a fine job over a long period keeping everyone informed and entertained on the doings of the Tasmanian hams and we must extend our gratitude to him.

1998 Convention

Well, the 1998 annual meeting and Convention has come and gone and what a great day it was all round. I was thrilled to feel the sense of fellowship very evident all day and into the evening. The pre-loved gear trade table was a Mecca for hams after something different, the trade exhibits were a credit to the firms concerned, and both the amateurs and ladies homebrew competitions had some brilliant examples of people's work.

Over 40 attended the annual meeting - haven't seen THAT many for a long time. A record return of voting papers for the Council election showed that the interest in what's happening in the Division is rising. What a shift around of positions!

A new secretary, Paul Godden VK7KPG from Scamander on the East coast; a new

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Ionospheric Update

Evan Jarman VK3ANI

C/o PO Box 2175, Caulfield Junction VIC 3161

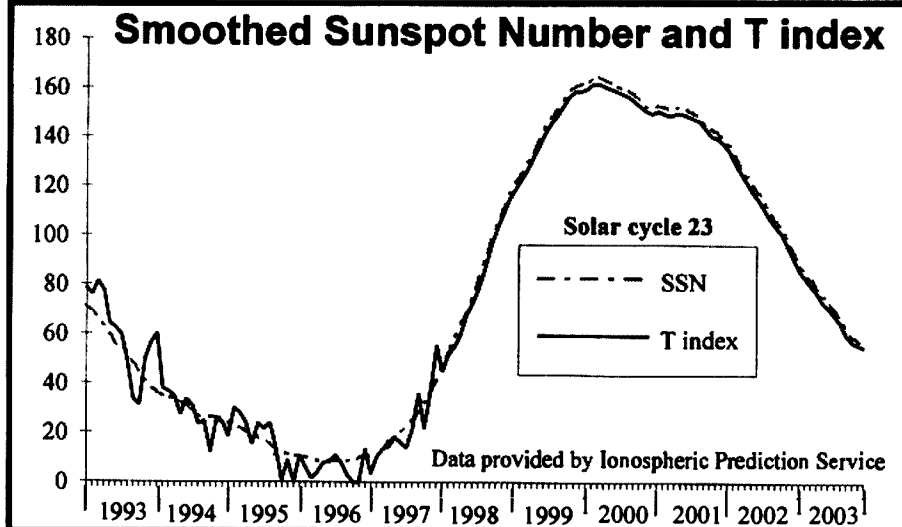
Solar Activity

The year started with solar activity at low to moderate levels. There were some coronal mass ejections and low class M flares during January and March. Eight coronal mass ejections were observed throughout January. They were evenly spaced; one every three or four days. No solar flare activity was reported by the Ionospheric Prediction Service for February. All the flare activity was class M, the more significant being:

1 Jan M1.1	@	0307 UTC
2 Jan M1.1	@	1303 UTC
3 Jan M2.7	@	1719 UTC
15 Jan M1.0	@	1438 UTC
25 Jan M1.3/2B	@	2136 UTC
15 Mar M2.0	@	2146 UTC
18 Mar M1.0	@	1112 UTC
19 Mar M1/1N	@	0125 UTC
22 Mar M1/1N	@	0700 UTC
23 Mar M2.0	@	0309 UTC

Ionospheric Activity

There were some depressed periods during the quarter but these, too, were not severe. All were in the 15% range and mainly affected southern Australia. They were around 10, 21 and 31 January; 1, 12, 14 and 18 February; and 11 March.



Geomagnetic Activity

The quarter was quiet, punctuated by some isolated geomagnetic activity. In January the most significant disturbance (on 7 January) was associated with the coronal mass ejection on 3 January. Activity on 25 January following an impulse was less than expected, rising only to unsettled. The unsettled to active conditions on 18 February followed a coronal mass ejection on 14 February. Similarly, the rise in activity on 10 March was CME related.

Solar Flux vs Sunspot number

The 10.7 centimetre solar flux is plotted in the observations graph each quarter. It is the daily observation from the Penticon Solar Observatory in Canada.

Many amateurs will be more familiar with the sunspot number as a measure of solar activity. It was used before other measures, like the solar flux, became feasible.

The sunspot number is defined as a count of the number of sunspots as well as the

number of sunspot groups. It has never been a truly objective measure. Differences between observatories in both their techniques and equipment means the results are statistical filtered.

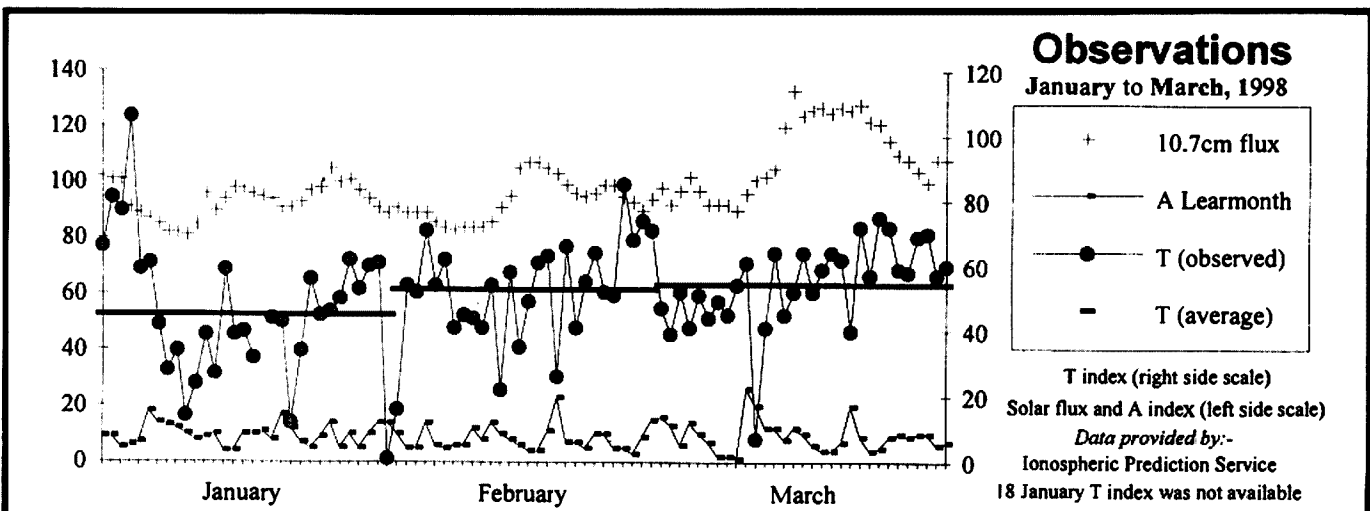
The solar flux has the advantages of being easily measured and being a more objective measurement. The sunspot number has a long history and consequently a large data base. For those who prefer the sunspot number, the two values do have a good statistical correlation. These formulae translate from one value to the other:

$$F=67+0.0572R+(0.0575R)^2-(0.0209R)^3$$

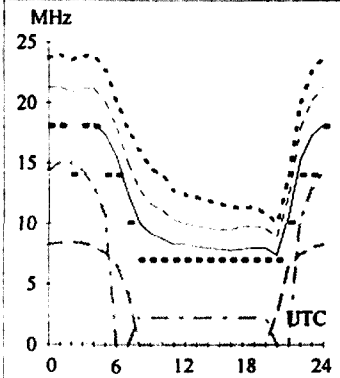
$$R=1.61(F-67)-(0.0733(F-67))^2+(0.0240(F-67))^3$$

where F is the solar flux and R is the sunspot number; named after Rolfe, the man who started the measure.

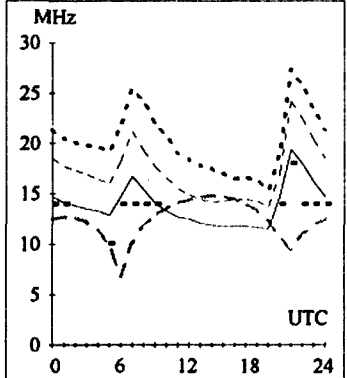
The factors on the square and cubic components are small and can be reduced to zero as a good approximation. This reduces the formulae to direct correlations. **ar**



Adelaide-Auckland 104
Second 2F13-14 2E2 Short 3240 km



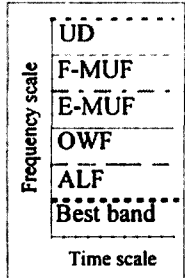
Brisbane-London 147
First F 0-5 Long 23498 km



HF Predictions

Evan Jarman VK3ANI

T Index: 66

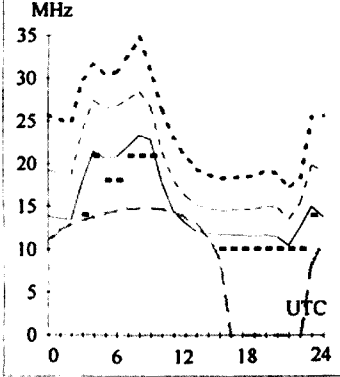


These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication. The frequencies, identified in the legend, are:-

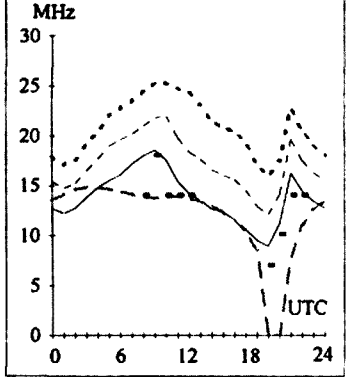
- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

The predictions were made with the Ionospheric Prediction Service program, ASAPS v3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

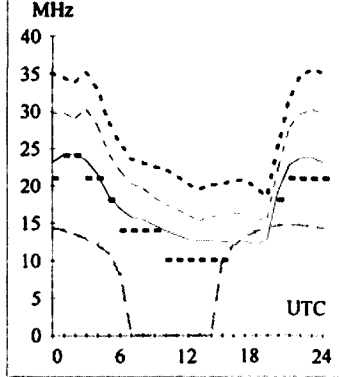
Adelaide-Cairo 288
First F 0-5 Short 13332 km



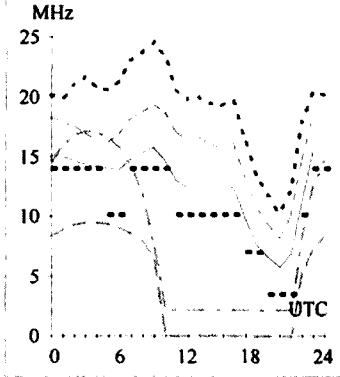
Brisbane-London 327
First F 0-5 Short 16526 km



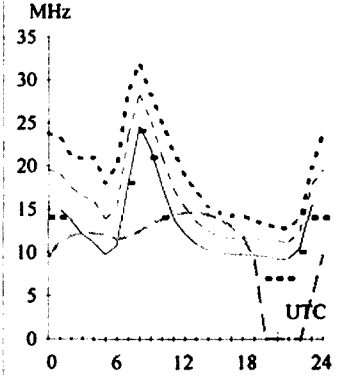
Canberra-Los Angeles 62
First F 0-5 Short 12309 km



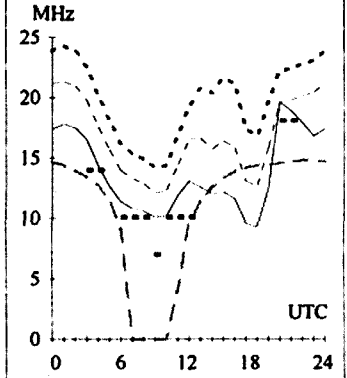
Darwin-Manila 340
Second 2F13-22 2E2 Short 3198 km



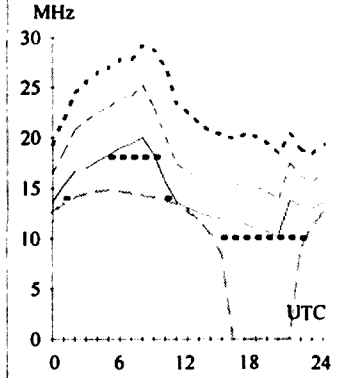
Adelaide-Dakar 233
First F 0-5 Short 16725 km



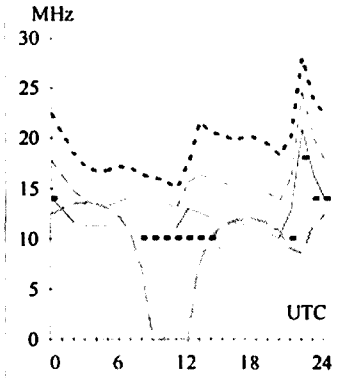
Brisbane-Ottawa 52
First F 0-5 Short 15306 km



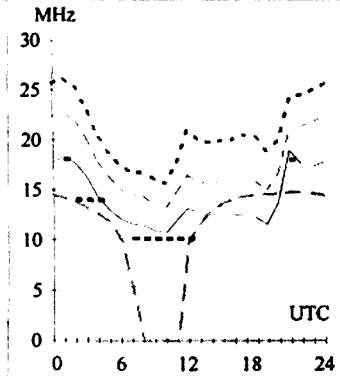
Canberra-Moscow 317
First F 0-5 Short 14481 km



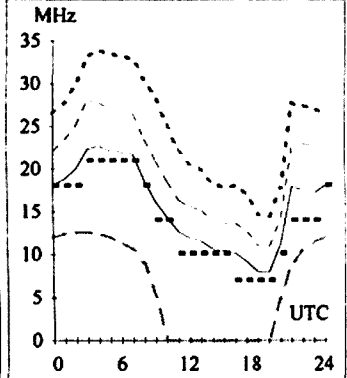
Darwin-Santiago 157
First F 0-5 Short 14421 km



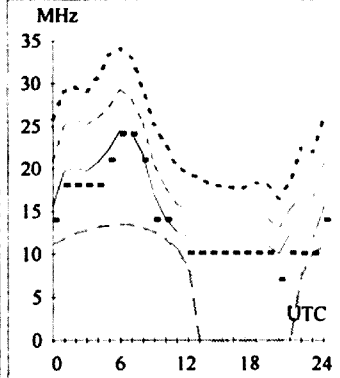
Adelaide-New York 67
First F 0-5 Short 17092 km



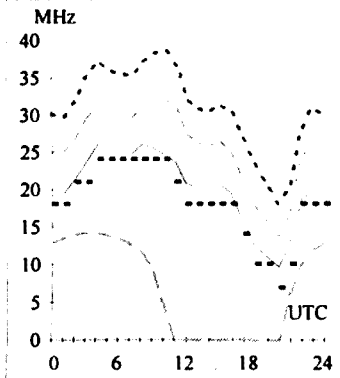
Brisbane-Tokyo 348
Second 3F6-11 3E0 Short 7159 km



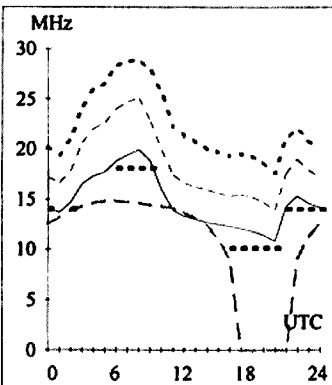
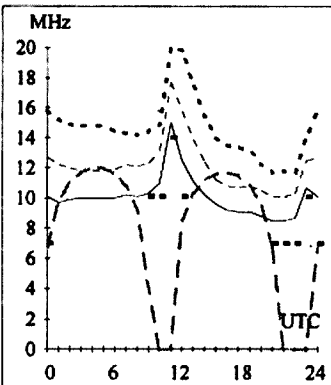
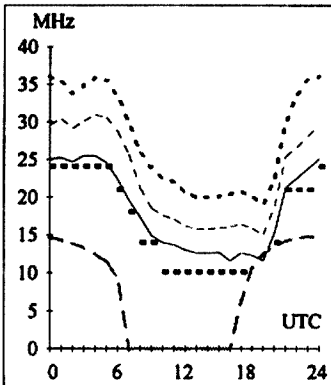
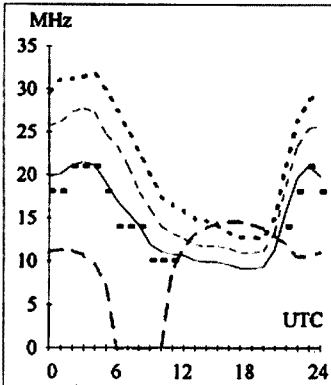
Canberra-New Delhi 303
Second 4F5-9 4E0 Short 10348 km



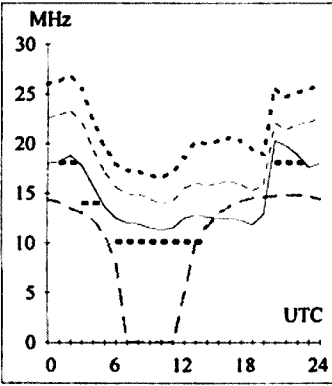
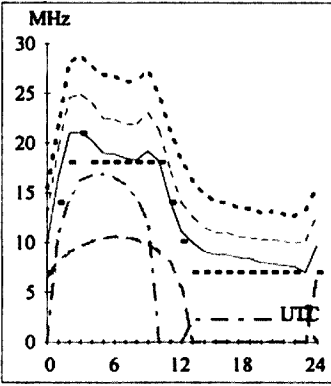
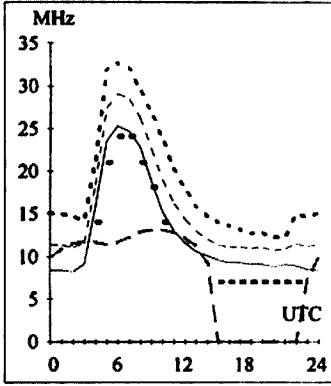
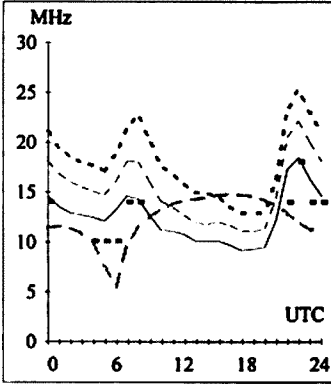
Darwin-Seoul 356
First 2F3-8 2E0 Short 5576 km



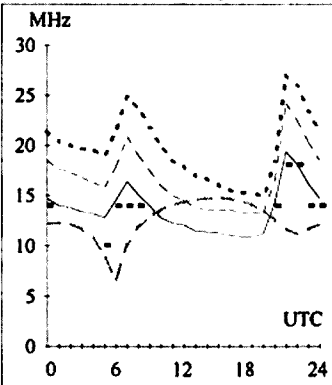
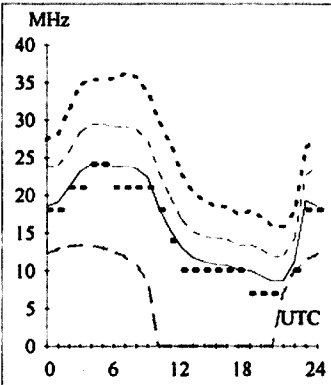
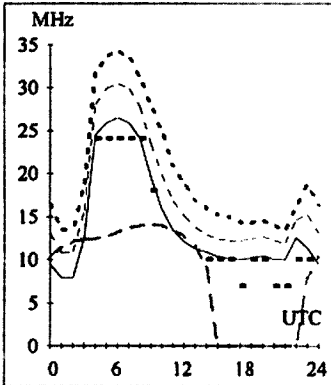
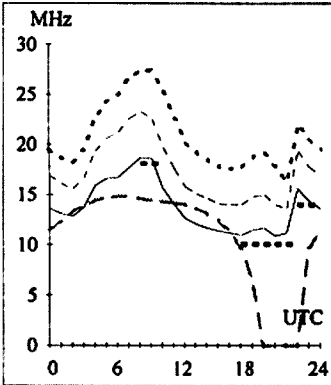
Hobart-Barbados 134 **Melbourne-Honolulu** 53 **Perth-Buenos Aires** 185 **Sydney-Budapest** 306
 First F 0-5 Short 15823 km First 3F2-6 3E0 Short 8879 km First F 0-5 Short 12591 km First F 0-5 Short 15778 km



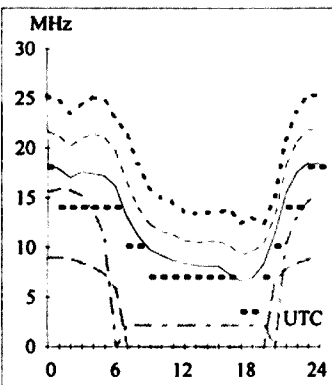
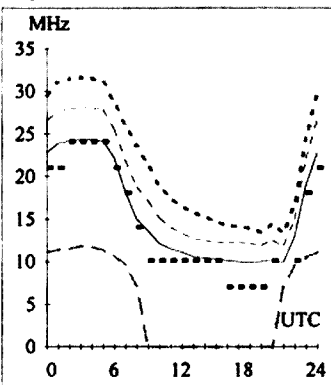
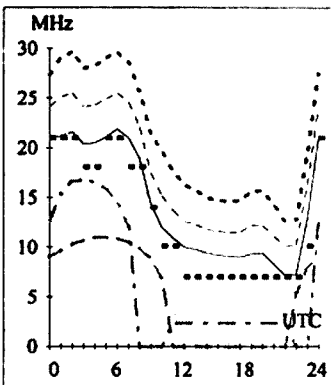
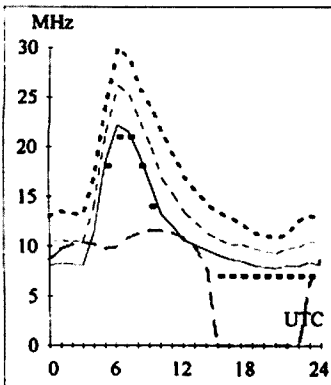
Hobart-London 123 **Melbourne-Lusaka** 241 **Perth-Colombo** 313 **Sydney-Chicago** 62
 First F 0-5 Long 22619 km Second 4F3-4 4E0 Short 11152 km Second 3F10-14 3E Short 5693 km First F 0-5 Short 14876 km



Hobart-London 303 **Melbourne-Nairobi** 258 **Perth-Osaka** 17 **Sydney-Paris** 133
 First F 0-5 Short 17404 km Second 4F3-4 4E0 Short 11500 km Second 3F5-9 3E0 Short 7684 km First F 0-5 Long 23063 km



Hobart-Pretoria 232 **Melbourne-Singapore** 306 **Perth-Wellington** 119 **Sydney-Suva** 64
 Second 4F5-6 4E0 Short 10173 km Second 3F9-11 3E0 Short 6057 km First 2F4-5 2E0 Short 5256 km Second 2F13-15 2E2 Short 3221 km



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- Kenwood TS-670S 6 m/HF, quality classic quad bander, 80 memories, digital, gen coverage of HF, FM unit, s/n 5050640, VGC, service manuals, sale proceeds to promotion of 6 M DX, realistic offers only. Neville VK2QF, QTHR, 02 6373 8624, fax 02 6373 8611.
- TH6DXX 6 el triband beam, good mechanical condn, \$249. 18 m (60 foot) 3 section Hills galvanised wind-up tower with guys and turnbuckles, \$399. Both dismantled Sydney, reasonable delivery arranged. Ted VK2EZQ, QTHR, 019 460 437.
- QTH with Council permission for 60 ft tower, 3 bed brick veneer on flat block, walk Asquith station near Homsby, block has DA for subdivision, invest for the future, new house, north aspect, high side of street, good DX location. Ted VK2EZQ, QTHR, 019 460 437.
- Digital rxcvr Band C Galaxy DGT400, new, box and instruction book, ready for immediate use, \$480 ONO. Peter VK2BPO, QTHR, 02 9713 1831.

FOR SALE VIC

- Icom 23 cm linear amplifier, 1 W in 10 W out, 12 V supply at 5 A, auto-switching, manual, \$150. Mirage 70 cm pre-amp, auto switching, 20 dB gain, \$100. MFJ-989C 3 kW deluxe roller inductor antenna tuner, cross needle SWR/Wattmeter, provision for wire antenna, multiple coaxial antennas and 300 W dummy load, original packaging and manual, \$550. Timewave DSP 9 audio noise reduction filter, 12 volt, Random and Tone noise reduction, CW filters down to 100 Hz, original packaging and manual, \$200. Kantronics KPC-9612 1200/9600 packet modem (V5.2), original packaging, software and manual, \$350. NALLY galvanised 8 metre tower, lower section 4.3 metres of 80 mm square tubing with a smaller section inside approximately 8 metres in length, winch attached to base to allow tower to be extended to full height, base section mounted against a wall with hinge bracket to allow easy erection to vertical position by one person, mast locks into a second bracket (supplied) mounted on the wall, dismantled and ready for collection in Hartwell, \$200. Chris VK3KCP, 03 9629 2653.
- Elite Line TX5500 all mode HF linear amplifier, \$250. Graeme VK3GPT, 03 5962 6098.
- New valves, 5762 \$65, 3CX2500F3 \$125, 807 \$12, 4-125A \$55. Used 5762 \$45, 3CX2500F3 \$85. Many golden era receiving types, 45's, 6D6, 57's, etc. Vacuum capacitors, 32 kV fixed 6/12/32 pF, \$15. Air-spaced variables, 5 kV 250 pF, \$45. Glenn VK3FFX, 03 9531 9301.
- Icom IC-20, vintage VHF with 7 xtal channels including 3 repeaters and 4 simplex, excellent condn with mic and mobile mount, \$60 post free. Peter VK3IZ, QTHR, 03 5156 2053.
- 13 V, 5 A regulated PSU with V and A meters, \$35. DJ2PU experimental 70 cm amplifier, 2C39BA, up to 45 W out, 3 spare tubes, manual, solid brass construction, \$35. Yaesu FT-262 m H/T, charger, manual, GC with beaut magnetic base antenna, \$150. Andy VK3UJ, QTHR, 03 9726 8879.
- TS-43X (TS-430S), s/n 4050599, mobile mounting bracket, hand mic, \$800. FT-690R MK1 6 m all mode txcvr, s/n 1020867, with home made 25 W linear amp, \$275. FT-620 6 m SSB/CW/AM 15 W txcvr, s/n 1G010492, 240 V operation, \$225. Mike VK3XL, QTHR, 03 9660 4353 (BH), 03 9703 2729 (AH - after 6 pm).
- Yaesu FT-707 txcvr, s/n 1H180522, \$600. Yaesu FRG7 rxcvr, s/n 6G503297, \$150. Philips PM3200 10 MHz CRO, \$150. Bondwell 286 laptop computer, \$150. Craig VK3DSG, QTHR, 03 9887 3870.
- Kenwood TL-922 linear amp, EC, with new finals, \$1800. Yaesu FT-900 mobile HF txcvr, with FSK-900 remote unit, mic, as new in carton, \$1450. Rob VK3JE, 02 6027 1077.

FOR SALE QLD

- Sailor (Denmark) marine radio station complete; Rx R1119, 10 kHz to 30 MHz; exciter

SI301L; amp T1127/H1200; 26.5 V supply N1400; relays, cables, hand set, manuals, \$300. N J Watling VK44YT, QTHR, 07 4038 1731.

● **Kenwood TS-440SAT HF** txcvr with MB-430, MC-43S, s/n 00110657, owners and service manuals, box, \$1300. **Tokyo High Power HF ATU**, \$275. Shure 444 desk mic, \$90. John VK4SKY, QTHR, 014 039 685.

● **Icom IC-502 6 m** txcvr, s/n 8938, with 240 V/12 VDC supply, \$25. **Tokyo Hi-power HL66V 6 m** all-mode 60 W amplifier, \$150. **Motorola (Systron Donner) service monitor**, 200 kHz to 1 GHz, \$1475. John VK4KK, QTHR, 07 3269 6647.

● **Kenwood TS-930S HF** txcvr, \$900. **Drake's Radio Cyclopeda**, \$35. **Radiotron Designer's Handbook, 4th Edition**, \$40. **Admiralty Handbook W/T 1931**, \$25. **Ghiradi Radio Servicing**, \$15. Western Union codes 1917, General Five Letter Codes 1901, ARRL Handbooks, *Amateur Radio* magazines 1960 to 1987, catalogue 45 cent stamp. Peter VK4APD, QTHR, 07 3397 3751 (AH).

● **Icom IC-740** txcvr, incorporates excellent rxcvr with 2 VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, very good working order and appearance, good reports on transmissions on all bands, \$650, call for copy of specs sheet. Atlas 210X compact 100 W txcvr, with mic and manual, \$175. **0-250 V auto transformer**, new, 1.8 A, \$60. **Kenwood AT-120 ATU**, very compact, great for mobile use, \$100. John VK4SZ, QTHR, 07 4061 3286, johnb@comnorth.com.au

FOR SALE SA

● **Sony ICF space age receiver**, all band SSB, quartz clock, \$400, bargain at \$120. **Drake linear amplifier**, pair 3-500Zs, 2000 W, \$4000, bargain at \$1400. **Akai portable reel-to-reel**, 4 speed, extra Hi Fi tapes available, amplifier not necessary. **4 milliampereters**, panel mounting, \$80, bargain at \$30. **Icom AT500**, new, offer wanted. **GE graphic equaliser**. A Shepard VK5DC, QTHR.

● **Kenwood TS-440SAT HF** txcvr, manuals, little use, \$1400 ONO. **HF tri-band Yagi**, needs tuning, \$50. **10 m two-section tower**, fixed, guyed, offers. **Converted CB base**, 28 MHz xtal, inbuilt PSU and Owr/SWR (old), \$50. Chris VK5YZ, 08 8356 4922.

● **Icom IC-706 mobile HF/6 m/2 m** all-mode txcvr with remote 3.5 m cable and dash mount, immaculate condn, original carton, s/n 01547, \$1500 ONO. John VK5KBE, QTHR, 08 8250 7259.

● Deceased Estate VK5FT: **Kenwood TS-700SP** multi-mode txcvr, s/n 750162, \$650. **Kenwood AT-200 antenna tuner** (case is water damaged but could be easily repainted), s/n 840706, \$150. **Kenwood AT-230 antenna tuner**, s/n 5070020, \$200. **Kenwood VFO-230**, s/n 1020666, \$200. **Drake R4B receiver**, s/n 1481b, \$200. **Drake T4XB transmitter**, s/n 18627b, \$200. All items ONO and in good working order. Ian VK5QX, QTHR, 08 8250 1708.

FOR SALE WA

● **Kenwood TS-950SD HF** txcvr, \$2500 ONO. **Kenwood TS-922 linear amp**, \$1800 ONO. Two **Eimac 4CX250BC valves**, new in boxes, \$400 ONO. **Com-an-tena beam**, 20-15-10, new \$300 ONO. **Crank/tilt-over mast** to 30 feet, \$200 ONO. **M Thomas VK6BMT**, QTHR, 08 9399 2024.

● **HAL P38 HF DSP modem**, operates Clover, AMTOR, Baudot, ASCII, Factor, all modes with DSP performance, \$400. C Patchett VK6CW, QTHR, 08 9459 4835.

● **Kenwood TS-520S HF** txcvr, s/n820930, external VFO, external speaker, spare pair of finals, \$350 ONO. **Trio/Kenwood TS-120S 100 watt HF mobile txcvr**, s/n930464, \$370 ONO. **SSB CB Itron Intruder**, \$100 ONO. Chris VK6KRS, 08 9451 4607.

● **TET Delta V antenna**, model DL32S, good condn, \$80. Neil VK6NEC, 08 9310 2976.

● **Kenwood TS-680S HF/6 m** txcvr, s/n 9060319, excellent condn, very little use, handbook, MC-80 mic. John VK6NZ, QTHR, 08 9776 7336.

● **Yaesu FT-290R 2 m** all mode txcvr, with carry case, nicads and car charger, VGC, \$430. **TA33 tri-band 3 element HF Yagi**, recently renovated, \$150. **Four, 14 foot-long fibreglass rods**, ideal for Quad spreaders, \$100. Phil VK6APH, 08 9245 2973.

● **Icom IC-765**, superb base-station txcvr in as-new condition, with FM board and AM narrow filter, complete with original box and manual, very reluctant sale, asking \$2,300 or nearest offer. Chris VK6BIK, 08 9574 4060, e-mail chrismor@avon.net.au.

● **Kenwood TS-530S**, plus Cushcraft R5 vertical multi-band antenna, SWR meter, co-ax and Morse key, \$750 the lot. John VK6AMK, 08 9582 8353.

FOR SALE TAS

● **Yaesu FRG7 receiver**, with Trio SP5 spkr, s/n 7H092971, \$150. Tony VK7CAJ, QTHR, phone/fax 03 6227 9292.

● **Heathkit SB230 linear amp**, uses 8873 triode capable of over 400 W, can be driven by most 100 W txcvrs, with instruction hand book, \$600 ONO. **Yaesu YO-301 monitor scope**, has 2 tone oscillator, excellent condn, \$100 ONO. Bob VK7ARM, QTHR, 03 6257 0400, fax 03 6257 0411.

● **Kenwood TS-430S**, AM/FM board, CW, SSB and AM filters, \$850. **GME 0-30 MHz marine vertical**, \$135. **Multi Quartz 16 2 m 10/1 W txcvr**, good condn, what offer? **Compakraft serial converter and cartridge**, software, suit C64 and C128, connects to PK323. Allen VK7AN, 03 6327 1171, 0417 354 410.

WANTED NSW

● **Plugins for Bird 43 Thruline wattmeter**, elements 5C, 2.5K and 25K. Guy VK2BBF, QTHR, 02 4751 6726.

● **Antennas: GAP Voyager, KLM KT-34XA, Hy-Gain TH7DXX**. Rotators: HAM 3 and HAM 4. **Collins 8000 system**. Valves: 3-1000. Tom VK2OE, 02 4646 1024 (evenings).

● **Kenwood TS-180 or TS-820**. Price and details to: Scotty VK2KE, PO Box 385 Albury NSW 2640.

● **Data sheets for: RF power transistor SRF1800; RF power transistor CD1601; audio amp chip TBA810**. Will pay reasonable photocopy costs. Pat Brennan VK2ABE, PO Box 158 Tamworth NSW 2340.

● **MN26C receiver parts: connecting cable and 6-pin plugs for loop, 23-pin plug for receiver, Bowden cable, hand rotator and direction indicator for loop, junction box**. Brian VK2EFD, QTHR, 02 4977 2178.

WANTED VIC

● **Manual or schematic and valve base voltages for a Swan SW-240 HF txcvr**, willing to pay copying costs. Glenn VK3FFX, QTHR, 03 9531 9301.

● **Galaxy 5 for spare parts**. Need output band switch. Jock VK3UB, 03 9499 2973.

WANTED QLD

● **Tuning knob 100 mm diameter**, match existing knob bearing trademark FADA C3; also second IF transformer screw-on type shield suit Bandmaster or Radiola receiver 1932/36 vintage. Bill VK4WHS, 9 Kidd Avenue, Maryborough QLD 4650.

● **Crystals 4.9 to 5.5 MHz in HC6/U holders**. L Schmidt VK4JZ, QTHR, 07 5485 3324.

WANTED SA

● **Tektronix spectrum analyser unit type IL20** for the 500 series CRO. C Ratcliff VK5ZST, 08 8520 2988.

WANTED WA

● **Yaesu FT-747GX HF mobile**, and any information about the remote front panel kit. Chris VK6KRS, 08 9451 4607.

MISCELLANEOUS

● **The WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

● If you got your licence before 1973 you are invited to join the **Radio Amateurs Old Timers Club**. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

D Computer Expo, Summerland, Lismore (NSW) City Hall, Sat 30 May 1998, 9.30 am to 4 pm, latest computers, accessories, Internet, pre-loved gear, lucky door prizes, refreshments. More info from Peter VK2LED, 02 6622 3862; or Graeme VK2GJ, 02 6685 1336, e-mail sarc@nor.com.au.

D 34th Annual Mount Gambier Radio Convention and Fox-Hunting Championships, 6 - 7 June 1998 (Queen's Birthday weekend). Full schedule available on SERG Website at <http://www.seol.net.au/serg/default.htm>

ar

VK7 New Members

The WIA bids a warm welcome to the following new members of the VK7 Division who have not previously been acknowledged in *Amateur Radio*:

VK7SM	Mr J Duggan
VK7GW	Mr G Walker
VK7MGW	Mr R W McCulloch
L70390	Mr W J Hardman
Listener	Mr M Rudling

**Sign up a new
WIA member
today!**

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Weekly News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601		President Hugh Blenkins Secretary John Woolner Treasurer Les Davey	VK1YYZ 3,570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://email.nla.gov.au/~cmakln/wiaact.html VK11ET VK1LD	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525		President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC 3,570 MHz LSB, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$58.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298		President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au Web: http://www.tbsa.com.au/~wivac/	VK3PC VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3XV VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMO 438.075. Major news under call VK3WU on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$81.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714		President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powerup.com.au	VK4HD 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463		President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35.579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$81.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873		President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6KZ 146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busseton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738		President Ron Churcher Secretary Barry Hill Treasurer Mike Jenner	VK7RN 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on VK7BE 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), VK7FB 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				

Note: All times are local. All frequencies MHz.

Membership Grades
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Besides being a fully-featured dual-band amateur transceiver, the VX-IR has extraordinarily wide receiver frequency coverage: you'll also be pleasantly surprised by the great audio on the FM broadcast band. A dual-watch facility is provided - and together with the AM, FM-narrow and FM-wide reception modes - you'll be having fun even when you're not operating on the amateur bands. For selective calling and listening, the VX-IR also includes a CTCSS encoder/decoder and a 104-code Digital Code Squelch (DCS) system as well as a Tone Search facility for both CTCSS and DCS encoded transmissions.

A great range of accessory lines for the VX-IR are available such as speaker/mics, a carry case, as well as a battery holder for 1 x AA alkaline battery which includes an inbuilt voltage step-up converter. Computer programming of the VX-IR is available via the optional ADMS-ID programming kit.

So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

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A Amateur R Radio



June 1998

Volume 66 No 6

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- Review of the Icom IC-746 HF+6+2 m Transceiver
- A Junkbox Regenerative Receiver
- Review of the Yaesu VX-1R Miniature Hand Held

Plus *lots of other articles, news and special interest columns*



Australian
Communications
Authority

Our reference: X97/1360

Mr Neil Penfold
President
Wireless Institute of Australia
PO Box 2175
Caulfield Junction VIC 3161

Delegation to the World Radiocommunication Conference 1997

Dear Mr Penfold

I am writing this letter to indicate the value of the contribution made by Mr Wardlaw at the World Radiocommunication Conference 1997 (WRC-97) held in Geneva last year from 27 October to 21 November 1997.

Representation of Australian organisations at such major conferences provides a clear benefit, I believe, to the organisation concerned in ensuring that your interests are reflected in the discussions and the outcome. Mr Wardlaw's efforts were also much appreciated by the ACA especially in relation to his work on Fixed Satellite and Mobile Satellite Service allocation and sharing issues.

All the delegates worked hard to achieve Australia's overall objectives and as a result we were successful in the having the majority of our proposals approved. As you may know these proposals were aimed at facilitating improved spectrum management overall, as well as to specific users such as your own organisation. Without such support and efforts by delegates from both industry and government such results would be much more difficult to achieve.

As a result of the decisions of WRC-97 there will be much work on changes to satellite communications and on a range of other services. The agenda for WRC-99 has been established and the ACA looks forward to the continued valuable contributions from Mr Wardlaw as we work towards developing common proposals with the Asia Pacific Telecommunity for WRC-99.

Yours sincerely

Roger Smith
Senior Executive Manager
Planning and Standards

24 March 1998

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The July issue will be delivered to Australia Post on Tuesday, 30 June 1998 for mailing to members.

If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with your local Post Office before contacting the registered office of the WIA.

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Cover Tony Hutchison VK5ZAI (seated) and Doug Tamblin VK5GA prepare to speak to Adelaide-born astronaut Dr Andy Thomas VK5MIR on board the Russian MIR space station. See VK5MIR stories on pages 14 and 26 of this issue.

(Photo courtesy of the Murray Pioneer)

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

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The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society Founded 1910

Representing the Australian Amateur Radio Service - Member of the International Amateur Radio Union

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Viewpoint

Editor's Comment

Repair or Recycle?

Once, many years ago (about 40, actually), as a spare time source of a little extra income, I used to repair TV sets around the neighbourhood. In those days of valves and monochrome it was a statistical fact that the average TV set needed some fault or other to be fixed about twice a year. Half these faults could be fixed by replacing a valve.

Valves, or vacuum tubes, were by far the least reliable device in the set, although fortunately the big vacuum tube in the front was surprisingly long-lived! Some sets were more accessible than others to work on, but most repairs involved less than one hour's work; and repair was very seldom not feasible.

Time went by, and the up and coming transistors began to appear (in the early 60s), at first in audio circuits, but ultimately everywhere except for the picture tube. Colour arrived in 1975 (in Melbourne and Sydney) and circuits became much more complex.

With the arrival of integrated circuits it was possible to squeeze much more circuitry into much less space, so "fixability" diminished. That didn't matter so much because solid-state circuits were much more reliable.

Our own main colour TV set is 22 years old and has never needed more than a twiddle of the touchy focus pot until just recently; solder joints to a power resistor became crystalline and came adrift.

There's not much future in TV repairs now! Our 22 year old will probably "hang in there" until digital TV makes it obsolete in a few more years.

The same sort of evolution has applied to amateur equipment, particularly transceivers. In the 1960s it was feasible to build one's own. If something went wrong with it, one fixed it himself (or herself).

Now, with all the digital "bells and whistles", almost any fault-finding or fixing is a factory job. If it's more than a few years old it becomes a "boat anchor".

More recently we find that personal computers are part of life for many of us. Not only is maintenance virtually impossible at component level, but the latest hardware is obsolete in a couple of years and not even good as a "boat anchor".

Where do we go from here? I don't know, but the future of garbage dumps seems to be assured!

Bill Rice VK3ABP
Editor

ar

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

WIA Monitoring 70 cm Moves in the United States

The WIA is treating as serious, threats to amateur frequencies in the United States. There are new reports that the 70 cm amateur radio band in the USA is under attack by commercial interests. There is also reportedly a chance that if the commercials are successful in their claims, the changes could spread worldwide with adverse ramifications for radio amateurs everywhere.

The ARRL has advised US radio amateurs (Bulletin ARLB030) that the US Land Mobile Communications Council (LMCC) has asked the FCC to immediately reallocate 420 to 430 MHz and 440 to 450 MHz from the US federal government to the Private Mobile Radio

Service (PMRS) on a primary basis. Amateur radio in the USA now enjoys the use of 420 to 450 MHz on a secondary basis, and the 430 to 440 MHz segment is an international allocation.

The 70 cm band is the second most popular of the amateur radio service's VHF/UHF allocations, with substantial FM repeater and other operation in the 440 to 450 MHz segment and a variety of uses in the 420 to 430 MHz segment.

On hearing of the news, administrations in other countries are acting to see that the same is not happening in their regions. One is the RAC which represents Canadian amateurs. Representatives of that organisation say

they are not aware of any similar initiative in Canada. Canadian radio amateurs use 430 to 450 MHz on a secondary basis. The 420 to 430 MHz band is not available to Canadian amateurs; it was reassigned to the Mobile (primary) and Fixed (secondary) services several years ago.

The FCC has called for comments on the LMCC's petition for rule making with the Federal Communications Commission. The petition is designated RM 9267.

While the rule making is currently a domestic US issue, there could be international consequences if approved in whole or in part.

Canadian amateurs have been advised not to take action at this time. RAC is monitoring the situation and consulting with the ARRL and IARU. RAC will advise of any action needed from the Canadian amateur radio community to assist in warding off the threat.

The Wireless Institute is being vigilant on the issue with the Executive, headed by President Peter Naish VK2BPN, looking at the situation closely. Peter said, "If there is a threat to the frequencies in this country the WIA ACA Liaison Committee will jump into action very quickly to safeguard amateurs' rights to continued use of the spectrum".

Automatic Position Reporting System for Amateur Radio Finally in Australia

As part of the *Wireless Institute of Australia's* plans for activities during the Year 2000 Sydney Olympic and Paralympic Games, the WIA Sydney 2000 Olympic Committee is helping introduce APRS to Australia.

The Committee, which has been formed under the auspices of the NSW Division to prepare the image of amateur radio for the Games, has committed itself to developing the system here in Australia in time for use at the time of the Games.

The Automatic Position Reporting System, or APRS, was used in the ATLANTA Olympic Games in 1996 to provide accurate reporting of runners positions on the marathon course.

This was perhaps the single most visible use of amateur radio in the last decade, showing amateur radio technology to 179 countries simultaneously.

The Wireless Institute of Australia NSW Division's Sydney 2000 Committee is planning activities for the period around the year 2000 Olympic and Paralympic games. The Sydney 2000 committee quickly identified APRS as THE technology to develop for possible use in the 2000 games.

Once identified, the process of informing Australian users about APRS has begun. Clubs initially in the Sydney Metropolitan area have been invited to hold an APRS information night where

members of the Sydney 2000 committee come to present a multi-media presentation on the subject. So far in excess of 100 amateurs have seen this presentation.

Chair of the Sydney 2000 Committee, David Thompson VK2NH, said, "The APRS technology is an exciting innovation which shows that amateur radio is alive and experimenting. It is at the forefront of technology and this is no exception. APRS is just one of many things the Committee is planning for amateur radio for the Year 2000 and the Games".

Discussions are taking place at the moment with Olympic planning authorities as to the implementation of APRS and its use during the Games. It is also expected that the position reporting system will take its place all over Australia as a useful device for amateurs and will be used by groups like WICEN for events and exercises for which they will provide the communications.

"APRS is one of the few technologies that cannot be replaced with the Internet or Cellular Phone", says Darryl Smith VK2TDS who brought details of APRS back from the United States last year after presenting a paper at the annual ARRL Digital Communications Conference in Baltimore, Maryland. Darryl has been appointed to the WIA NSW Sydney 2000 Committee and is assisting in plans the Committee has for the Sydney 2000 Olympics and Paralympics.

Federal AGM Complete

All business in the 1998 Federal Annual General Meeting has been completed in a teleconference.

The conference which reached right around Australia via a telecommunication hookup, featured the adoption of the 1997 Annual report and the appointment of the auditors for 1998.

The new executive, comprising Peter Naish VK2BPN as President, Martin Luther VK5GN, Wally House VK6KZ and Neil Penfold VK6NE, has begun the job of managing the affairs of the Institute.

One of the first tasks will be the preparation of a business plan to take the WIA into the 21st century.

Move to Speed Up the Advent of Digital Radio

In a move described as a 'challenge' by the International Telecommunications Union (ITU), a non profit consortium has been set up in order to produce a world standard for digital broadcasting. Digital Radio Mondiale comprises broadcasters, network operators, transmitter and receiver manufacturers, other hardware and software industries and standards and regulatory bodies.

The aim of the DRM is to produce a system for short-wave, medium-wave and long-wave broadcasting that would be the single, tested, open non-proprietary, consumer-oriented digital broadcasting world standard.

The single world-wide standard is considered necessary to keep costs down and reach a mass market required to encourage broadcasters to move away from analogue systems currently used.

This action has been taken in response to the 1997 World Radiocommunication Conference which decided to give a green light to the adoption of spectrum-efficient techniques such as digital modulation techniques. WRC-97 took this decision given the imperative need to make room in the highly congested HF bands.

Broadcasters have a vital interest in adopting digital techniques. Most public broadcasters are operating large AM transmitter networks in short-wave, medium-wave and long-wave frequency bands which required huge investments but are facing a steady decrease of their

audience due to the better quality offered by other delivery mechanisms. The introduction of digital techniques for broadcasting in these frequency bands could revitalise the service and the networks could continue to be usefully exploited.

Implementation of digital radio for broadcasting is expected to allow operators to provide services which could compete successfully with current and future high-quality audio services. Digital broadcasting AM represents a net improvement over conventional analogue radio in that it will provide higher reliability, superior stereo audio quality comparable to that of FM, better protection against interference, greater area coverage with less power and easy-to-tune receivers.

The system would also have to be compatible with any digital and conventional analogue system either through dual-system receivers or a simulcast approach that would enable a smooth transition from analogue to digital. It would also have to take account of the different planning environment where the channel spacing differs among regions and frequency bands.

"The task is indeed a challenge", said Robert Jones, Director of the ITU Radiocommunication Bureau. "We must be able to deliver a standard which will respond to what the market demands and quality low-cost broadcasting is high on the list", he added.

GB2RS Cancels 20 Metre Transmission

On the international scene, the Radio Society of Great Britain says that it has terminated its experiment with a 20 metre GB2RS bulletin service.

The RSGB spent last winter experimenting with an SSB voice bulletin transmission on 14.308 MHz.

It evaluated the results and found that a regular listenership cannot be established for such a service. GB2RS transmissions will continue on 1.990, 3.640, 3.650 and 7.040 MHz at their regularly scheduled times.

[via RSGB]

Hams Assist in Wake of Italy Mudslides

Italian radio amateurs have been active assisting rescuers after devastating mudslides in southern Italy killed at least 91. According to news reports, fire-fighters in Sarno found one man alive at the base of a well near his house after he was spotted by an unidentified ham radio operator who called for help.

The mud has also washed out telephone service to the affected cities making ham radio an important communications pipeline. Authorities say that the mudslides were brought on by days of heavy rain.

[via news reports]

WRTC-2000

It is planned to hold the HF World Radiosport Team Championship 2000 in Croatia. We would have liked to have held it here in Australia to coincide with the Olympic Games, but it proved impossible to meet the 50 stations and antenna criteria. Croatia took up the gauntlet and, under the eye of the WRTC-96 committee, a new committee was formed with Tine S50A at the helm.

Creating, developing and implementing an event such as this is no mean feat. In 1996, 52 two-person teams competed in an 18 hour marathon during the IARU Contest. This Championship contest was held in the San Francisco Bay area. Australia was invited for the first time in 1996 and, under the Team leadership of Martin VK5GN, he and David VK2AYD operated as W6Z.

Teams are not selected by a Society or Club from the country they are going to represent. A Team Leader is selected by the WRTC Committee and he, or she, will select their partner. The qualification of the Team Leader is based on the position they achieved in contests from 1995 to 1999 in the CQWW CW and SSB, CQWPX CW and SSB, and the IARU HF CW/SSB contests. This gives a total possibility of 20 contest scores from which the 15 best scores will be selected.

To make this fair world-wide, the Committee took a cross section of logs from 1996 and broke it into Continents. Oceania represented 2.49% and in consequence qualifies for only one team.

WRTC-2000 will be a 24 hour contest and will coincide with the IARU HF Contest. There will be a four hour obligatory time-off period. As an addition to (but not within) the IARU HF Contest, CW and SSB simulated reception (pile-up tapes) will be added. All teams will listen to the same tapes.

The WRTC-2000 Committee are keen to hear from people interested in participating as a contestant and have asked that they send a formal application to the Committee. Details of this can be obtained directly from Tine S50A, e-mail address tine.brajnik@guest.arnes.si or by e-mail (or on air 40 and 20 metres CW) from David VK2AYD at davpil@midcoast.com.au

[News item from David VK2AYD]

WIA Public Relations Co-ordinator

David Thompson VK2NH has taken up the position of Public Relations Co-ordinator for WIA Federal.

David comes to the Institute with a solid background, in the media (like many amateurs), as a broadcaster and journalist. He is currently employed in the production of publications, journalism and promotions as well as researching and writing speeches and the preparation of publicity materials. A Councillor for the New South Wales Division of the WIA, he is Chair of the Sydney 2000 Committee which is charged with preparing amateur radio for the Year 2000 Sydney Olympics and Paralympics.

In the belief that an organisation should be proactive and caring to its members in order to succeed, David has embarked on a study of the Institute, its needs and strengths and weaknesses. He has asked all members and non-members to contribute to this study. He believes in true representation and says, "The only way

we can achieve this is to find out what the members think. We also have to consolidate and nurture our relationships with the all important bodies such as the ACA".

One of the new initiatives is to introduce an easily accessed Federal WWW page which will exhibit the many facets of the WIA to those both at home and abroad. This will be designed to suit the WIA's image as the longest running amateur radio body in the world. The page will also be linked to other societies globally. It will concentrate on the welfare of amateur radio and its members while at the same time providing a wealth of information and representation of the Institute to amateurs everywhere. You will find out more about David's philosophy in the near future. He promises to "keep you informed".

You can contact David through the Federal Office, or by e-mail. His address is dthom@penrithcity.nsw.gov.au ar

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

420-450 MHz is wanted by Australian commercial interests
RF emission regulations threaten handhelds, mobile rigs, and suburban home stations, with bureaucratic limits

More of 7 MHz is wanted by global broadcasters

RENEW YOUR MEMBERSHIP RECRUIT NEW MEMBERS

WIA action has:

- Cut the cost of licence fees
- Cut fees on beacons and repeaters
- Improved licence conditions
- Retained access to 50 MHz and 576 MHz; and more!

The WIA maintains representation:

- At World Radio conferences
- To the ACA
- On the Radio Communications Consultative Committee

Strength in numbers - Subs help pay



Your
Hobby

Your
Voice

Equipment Review

Icom IC-746 HF + 6 m + 2 m 100 Watt Transceiver

Reviewed by Ron Fisher VK3OM
24 Sugarloaf Road
Beaconsfield Upper VIC 3808

Yes, that's right! All amateur bands right through to two metres and with 100 watts output on all bands!

It seems that the IC-706 has grown up. Not only that, but you also have a transceiver with all wanted features including Digital Signal Processing and 100 plus memories. What more would you need in the shack?

For most amateur operators this single transceiver would take care of 99.9% of their operating requirements. Having said that, there is one thing you may not want to do with the IC-746 and that is use it mobile. You could, of course, but I, for one, would prefer to use an IC-706 with its diminutive size and removable front panel.

The IC-746 is primarily a base station but, as it requires an external 13.8 volt DC supply, it could be used mobile if you could find room to fit it in. Icom do not have a mobile mounting bracket to go with it so you would have to devise a mounting system to suit your vehicle; also, there is no remote control facility and the front panel is firmly fixed on with no chance to remote it. Of course, it would make a superb portable set-up.

Again I have enlisted the help of John Patterson VK3ATQ to provide some expert help with measurements, and comments on six and two metre performance.

IC-746 Features and Facilities

At first sight, the IC-746 has a different appearance from most transceivers that we have become used to. The cabinet is almost square. This means that it will take up much less width on your operating

desk compared with most older transceivers. The actual dimensions are 287 mm wide by 316.5 mm deep and 120 mm high.

An important feature of the IC-746 is the solid construction. The transceiver is built into a specially designed diecast frame. It is divided into compartments which improve the shielding and rigidity. Construction is based on the earlier successful IC-756. The IC-746 weighs in at 8.9 kg.

The outstanding feature of the transceiver is the LCD. This measures a whopping 105 mm wide by 70 mm high and conveys an enormous amount of information to the operator. A quick look at the close-up photograph gives an idea of just what is available.

As mentioned before, the IC-746 has transmit capability on all amateur bands from 160 metres right through to the two metre band. The receiver has full

coverage from 30 kHz to 60 MHz, and then from 108 to 174 MHz. It's nice to see that Icom have provided receive capability between 30 and 50 MHz to allow six metre operators to check the MUF for openings.

The 108 to 174 MHz range includes all manner of interesting things to listen to, including the aircraft band. One feature carried on from earlier Icom models is the band scope feature. The IC-756 transceiver reviewed in an earlier issue of this magazine had a superb band scope facility. Unfortunately, the one in the IC-746 is not well implemented. I will have more to say about this in the "on the air" section of the review.

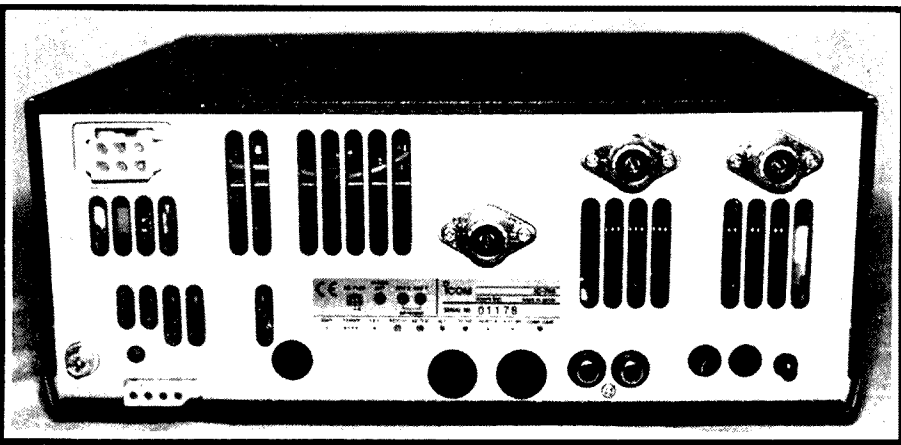
Naturally, the IC-746 has Digital Signal Processing to improve readability of incoming signals. It has three functions. One, noise reduction for use on all modes; two, automatic notch filter to eliminate heterodynes for SSB reception; and three, an automatic peak filter with selectable bandwidths of 80, 160 and 320 Hz for CW operation. The centre frequencies of these slots are also adjustable.

Another of the very nice features is the twin passband tuning. This enables the selectivity to be narrowed from both sides at the same time. You can watch the effect on a special segment of the main display.

Of course, the IC-746 is loaded with memories. There are 99 standard memories, two scan edge setting memories plus a call channel. However, it doesn't end there. There are five quick



Front view of the IC-746.



Rear panel of the IC-746.

“memopad” memories which can be expanded to ten, if required, via the menu system.

Each band selection button stores three different frequencies in a band stacking system and, of course, you also have two VFOs to add to the overall versatility of the transceiver.

The keen CW operator has not been forgotten either. There is an in-built four channel memory keyer with 50 characters. A multi function electronic keyer is also included.

There is a CW pitch control and the transceiver has full break-in capability. Add all of this to the above features and it adds up to very versatile operation.

Naturally, there is an automatic antenna tuner built in which works on all bands up to 50 MHz. The ATU has its own memory backup which allows frequencies to be pre-set.

IC-746 On the Air

Connect up your 13.8 volt DC supply and an antenna, and away you go. As is usual, the LCD takes a minute or so to come up to full brightness but when it does you will see one of the clearest displays around. Both the contrast and the brightness are adjustable via the menu system.

There are three SO-239 sockets on the back panel of the IC-746 for multiple antenna connections. Two of these are shared between normal HF and 50 MHz antennas while the third, which is well separated (see back panel photo), is dedicated to the two metre amateur band as well as the 108 to 174 MHz receiver. Switching between the two HF sockets is controlled via a front panel button, or a

particular socket can be dedicated to any band or group of bands.

The tuning is typical Icom, that is very smooth. There are several tuning rates to chose from; one Hertz steps, ten Hertz steps and one kHz steps. However, this goes a stage further via the menu system where you can choose steps of 0.1, 1, 5, 9, 10, 12.5, 20 and 25 kHz. It is also possible to assign a particular step size to a particular mode.

A nice feature carried on from the IC-756 is the combination RF gain and squelch control.

Via the menu again, it is possible to set this single control as an RF gain only, a squelch control only, or a combination of both by using half the rotation of the control for each function.

Reports on the transmitted SSB signal were more complimentary than I have had for a long time with an Icom transceiver. There is a “tone” control for the transmit audio response which is not quite as elaborate as the one in the IC-756.

The IC-746 control allows the band pass to be shifted up and down slightly. Most listeners were unable to detect very much difference in either extreme of the setting. The curves of the response published in Fig 1 show why this is so. I recommend you set the menu to give maximum high frequency response and you won’t go too far wrong.

MHz	1.8	3.6	7.1	10.1	14.2	18.2	21.2	24.0	28.5	51.0	146.0
Pwr (watts)	120	115	110	110	107	105	105	100	100	95	95
ATU (watts)	100	100	105	100	95	97	95	95	90	85	na
IC (amps)	20	18	19	17	18.5	17	20	21	19	18	17.5
IC & ATU (amps)	19	18	19.5	17	18.5	18	19	21	20	18	na

The IC-746 is supplied with an MH-36 hand microphone and I also used an SM6 desk microphone which, as usual, was rated slightly the better of the two.

The IC-746 also has an RF speech processor to give the transmit audio a boost. John Patterson gives his opinion: “The processor worked well but the audio was not as ‘punchy’ as the reference transceiver Close in, most liked the 746 but, for weak signal work, the reference transceiver was more readable.” The processor is adjustable via a rear panel control but there is no metering to set the clipping level.

Talking about metering, the display gives bar graph metering for ‘S’ meter, transmitter power output, ALC and SWR. While transmitting, power, ALC and SWR can be monitored at the same time.

The receiver audio quality through the internal speaker was reasonable. The quality has a slightly hollow sound but an external speaker (an Icom SP3) produced a great improvement.

Now for a few comments on the operation of the DSP. The action of the automatic notch filter is excellent on SSB as is the peak filter on CW. In fact, the peak filter works so well that you might well find you can live without the optional CW filter. The noise reduction is another matter. It did make a small improvement copying CW signals through noise, particularly when used with the peak filter and the normal noise blanker. However, trying to eliminate noise from SSB signals was another matter.

I must be honest but I could not find a situation where an unreadable signal could be improved. I look forward to the next generation of Digital Signal Processing noise reduction.

Finally, let’s look at the band scope. From the advertising literature you might get the idea that it works like the excellent band scope in the IC-756 (see the review in May 1997 *Amateur Radio*).

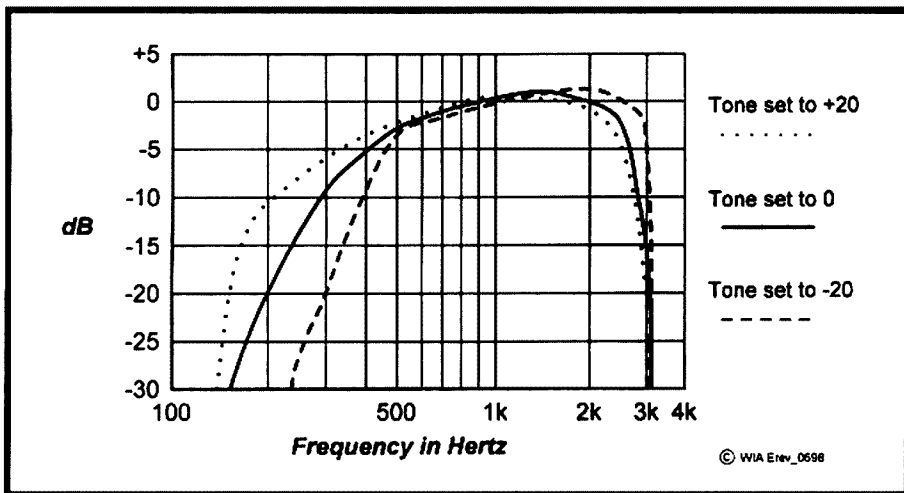


Fig 1 - Transmit audio frequency response of the IC-746 measured at 20 W output at 1 kHz USB on 14.2 MHz with no compression and no ALC reading.

Unfortunately, not so. It appears that, to build up a band picture, the receiver is put into a scan mode plus or minus from the tuned frequency. While this is happening the receiver goes dead. Not a sound. So you have a choice. Either listen to the signal coming in, or watch them coming in, but not the two together. So it will tell you what was there before you listen, but not what is there now. In short, forget about it.

IC-746 On Test

The first test, as usual, is the transmitter power output and current drain. This time I have also included the power output measured through the automatic antenna tuner (see Table 1). This was done with the transceiver connected to a 50 ohm load which would produce minimum losses; no doubt the losses would be somewhat higher when matching a load other than 50 ohms. However, it gives a picture of what to expect. Overall the losses were very low and would pass unnoticed on the air. I have also noted the total current drain both with and without the ATU.

If you intend to run full output FM on 6 or 2 metres you would need to make sure that your power supply is capable of supplying the current for the time you intend to hold the button down. Many power supplies are rated at 20 amps for short peak output only, and may not be happy with a continuous 20 amp drain.

Transmit intermodulation distortion was checked out at -25 dB with 100 watts output on 14.2 MHz. This is an average

figure for a transceiver running from a 13.8 volt DC supply.

Next on the list was measurement of the transmit SSB audio frequency response. A quick look at the graph (Fig 1) will show why there was very little difference in quality reports with the "tone" control set to either extreme.

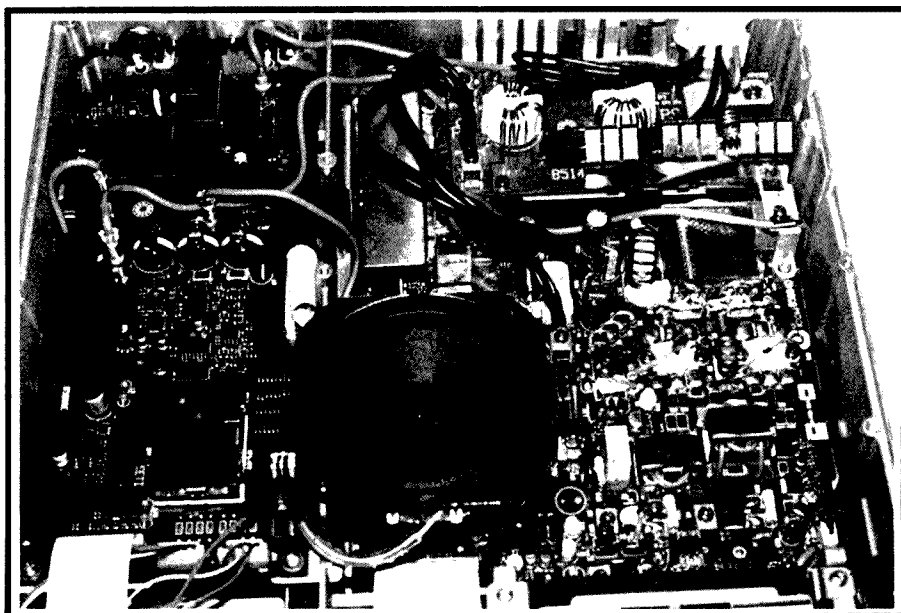
It might be a good idea to explain again how these graphs are produced. The procedure is very simple and most amateurs could try it on their own transceiver. The equipment required is a calibrated audio signal generator, an attenuator to reduce the output to microphone level, and a calibrated RF

power output meter with a full scale capability of about 30 watts. Feed the audio into the microphone input of the transceiver with the generator set at 1 kHz. Adjust the microphone gain to give about 20 watts RF output. Run the audio generator from 200 Hz to 3 kHz and plot the RF power output. Now simply convert this into dB relative to 1 kHz and there you are.

Compare your results with some of the curves I have included with reviews over the last couple of years and see how your transceiver shapes up. A final point, keep the maximum power output to below 30 watts for a normal 100 watt output transceiver to eliminate compression effects produced by ALC action and make sure the processor is switched off.

The next test was to check the audio end of the transceiver. Specified audio power output is rated at "better than 2 watts" at 8 ohms with no distortion figures mentioned. Here are my findings: maximum audio output at 8 ohms was 2.2 watts; and at 4 ohms it was 3.6 watts, but both had very high distortion figures. At 10% distortion (a figure often mentioned in specifications) the power output was 1.8 watts and, at a more normal listening output level of 200 milliwatts, the distortion had dropped to an excellent 0.3%.

Current drain was next measured for receive operation only. With no audio



Top view of the IC-746 out of its case. The PA is to the right. Note the rigid die-cast frame.

output, drain was exactly two amps; with full audio output it was 2.2 amps. With normal listening level audio (100/200 milliwatts) the increase in drain over two amps was not discernible.

Receiver Sensitivity

Because of the very wide frequency coverage of this transceiver, and the undoubted interest that will be shown in the six and two metre performance, I called in the services of John VK3ATQ. John takes a keen interest in 6 and 2 metre DX and also has access to some very sophisticated test equipment.

First, the results on six metres. The noise figure was measured with no pre-amp, with pre-amp 1 and then pre-amp 2. With no pre-amp the noise figure was 4 dB; with pre-amp 1, 4.7 dB; and with pre-amp 2, 3.9 dB. The lower the figure the better, so it's interesting to see that, although the gain increases, the noise figure actually gets worse with pre-amp 1 and improves by only 0.1 dB with pre-amp 2.

Compared with John's usual transceiver, which has a noise figure of 2.5 dB with the pre-amp in, this means the difference between good readability and no readability. On two metres there is only one pre-amp. The noise figure with no pre-amp was measured at 5.4 dB, and with the pre-amp in, 1.8 dB. The latter figure is quite respectable but the figures show why the receiver sounded rather

deaf with the pre-amp switched out. As a comparison, John uses an Icom IC-275 on two metres and this has a noise figure of 1.5 dB, 0.3 dB better than the IC-746.

The absolute sensitivity on both bands was as follows. Six metres with no pre-amp, pre-amp 1 and pre-amp 2 measured -136, 135.5 and 136.3 dBm respectively, while on two metres 134.8 and 138.4 dBm were the respective figures.

John also had a few comments about the noise blanker action. With the beam lined up on the local power line noise, the IC-746 blanker reduced the hash from S7 to S2. However, his usual transceiver was able to bring it down to S0.5 which equates to several dB difference.

Sensitivity on the lower bands was, in all cases, equal to or better than the specified 0.16 μ v for 10 dB signal to noise ratio, and was very constant from band to band.

Next the S meter calibration and the pre-amp gain were measured. I did all of these tests at 14.2 MHz. The bar graph S meter is calibrated at S1, 3, 5, 7, 9 and +20, +40 and +60 dB.

The input required for a reading at these points with the pre-amps and the attenuator off was; 4 μ v, 5.5 μ v, 8.5 μ v, 20 μ v and 100 μ v for S9, and 700 μ v, 0.006 volts and 0.04 volts up to +60 dB. Pre-amp 1 has a gain of 10 dB and pre-amp 2 produces 24 dB gain.

The attenuator measured -20 dB and there is only one position available. The

overall gain of the receiver was very constant right across the amateur bands with no more than 2 dB variation noted.

The selectivity options available for the IC-746 are most interesting. No options were installed in our review transceiver. These things never are, unfortunately. I can therefore only speculate on their performance.

For the ardent CW operator there are two 500 Hz filters available, one for the 9 MHz IF, the other for the 455 kHz IF. However, the filters that I found most interesting are the wide SSB with 2.8 and 3.3 kHz bandwidth.

I enquired from Icom if these were installed would it be possible for the SSB transmit signal to be routed through them to improve the audio quality. However, they were unable to answer the question.

I would like to hear some high quality SSB; sometimes I think modern transmitters restrict the bandwidth a bit too much. There are also narrow SSB filters with bandwidths of 1.9 kHz at 9 MHz and 1.8 kHz at the 455 kHz IF. Installation of the optional filters appears to be quite easy with no soldering required. I hope that one day I might have the chance to give an opinion on their operation.

IC-746 Instruction Manual

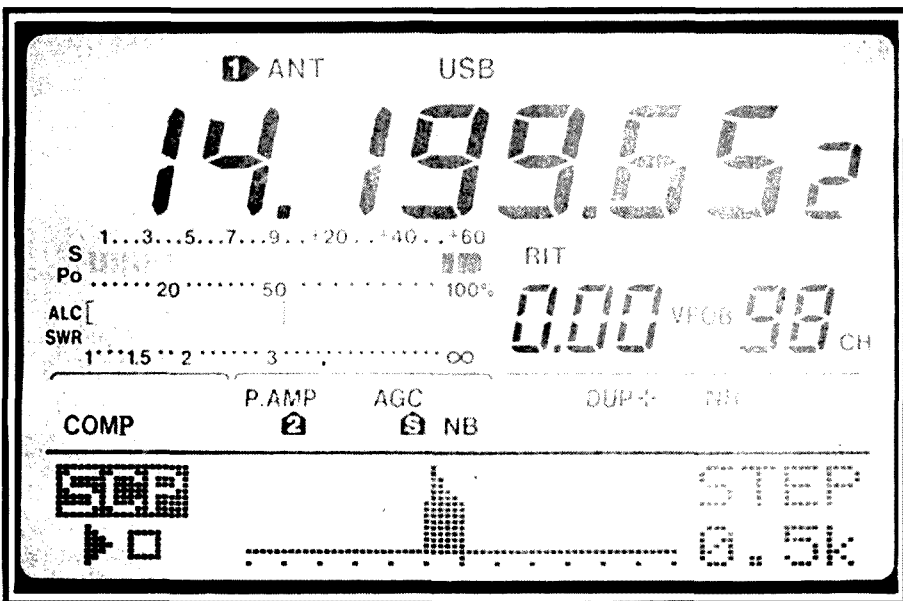
While the operation of modern transceivers is often fairly self evident, the time will come when you will need to read the book. As an example, there is no way that the "set" mode could be sorted out without reference to the manual.

The IC-746 manual runs to 85 pages and, apart from a few typographical errors, is very well written. There are clear instructions on the installation of the optional filters, the voice synthesiser unit and the high stability master oscillator.

Again, as seems usual these days, there is no technical description or circuit diagram supplied.

However, you will find more information in a concise form in the advertising brochure.

Again, a plea! Would it be possible to put a heavier cover on instruction manuals. They seem to get dog-eared very quickly.



A close-up of the LCD on the front of the IC-746

IC-746 Conclusions

Overall, I found the IC-746 a very likeable transceiver. It offers a combination of facilities not easily available in any other transceiver.

Both the transmit and received audio quality in all modes is very satisfactory.

However, if you are looking for top performance on six metres you might have to look somewhere else. I guess you could consider a mast-head pre-amp.

The band scope is, unfortunately, a dead loss. It looks good in the advertising brochure but doesn't live up to its promise.

The list price of the IC-746 is \$3,700 but I have noted that dealers are advertising it for somewhat less than this. Dash in and pick up a bargain.

Our review transceiver was supplied by Icom (Australia) Pty Ltd. Further information is available direct from Icom or from any of their dealers throughout Australia.

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Time, Gentlemen, Time!

An Australian company, HPM Technologies, has launched the world's most advanced time system, Telechron.

It is pending an international patent and is a "wireless" clock. That is, the clocks are stand-alone units which are

automatically corrected for time at least four times per day from a paged radio signal.

Accuracy is better than 250 milliseconds.

[From the Australian newspaper via Qnews]

High Charge for a Telephone Call

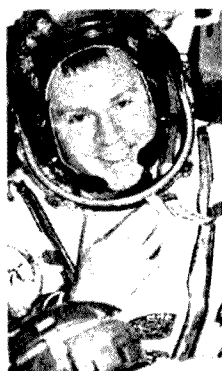
Owning a cellular telephone can get you arrested. Just as the trucker recently found out when he was taken into custody in Los Angeles because another driver thought his telephone was a gun.

According to news reports, the incident took place in late March. California Highway Patrol officers arrested the unnamed truck driver early in the morning on the southbound Interstate 405 freeway at Imperial Highway. This, after the driver of a sports utility vehicle reported the trucker had pointed a weapon at him.

Police say that the big-rig driver pulled out a cellular phone to make a call. The other motorist thought it was a gun and he called for help on his cell phone. The truck driver was initially charged with allegedly brandishing a firearm at another motorist. He was released after investigators determined the object was a cellular phone, not a gun.

[via published and broadcast news reports and Amateur Radio Newswire]

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June's R&C is simply a "must buy" item this month. Only \$4.70 gets you going...

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- DXing from Banaba. One of our contributors lives there. A DX Paradise? Maybe, but life's tough...
- THE CONSTRUCTION ZONE: VK3AFQ presents another great project — an AGC for DC receivers.
- FEEDBACK. Your letters are back, and after last month's WIA report... well, people want some action!
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Equipment Review

Yaesu VX-1R Miniature Hand Held Transceiver

Reviewed by Paul McMahon VK3DIP
47 Park Avenue
Wattle Glen VIC 3096

What Is It?

The VX-1R is a miniature hand-held dual band (2 m and 70 cm) FM transceiver. The receiver coverage is a very wide 0.5-1.7 MHz (Yes, the AM broadcast band!) and 76-999 MHz, with AM, FM Wide and FM Narrow modes selectable. As you will see from the photos the unit is very small (47 x 81 x 25 mm) and very light (125 gm). The review unit was kindly supplied by Dick Smith and had the serial number 71022680. Retail price is around \$499.

First Impressions

Yaesu call it an Ultra-Compact/Micro-Miniature Dual-Band Transceiver with Wide-band Rx coverage. If you look at the photo with the VX-1R and a relatively recent Yaesu dual band hand-held it looks positively tiny. There is, however, very little that has been left out of this package. What it loses out on in the output power stakes is well made up for in newer battery technology, and the ability to effectively double as a broadcast band receiver. This small size is even more impressive when you look at the photo with the battery pack removed, as it takes up close to half the space in the case.

Again from the photos you will see that, even with the small size, the equally small number of controls helps to maintain an uncluttered look. There is basically one knob plus 10 buttons, including PTT, to control all the functions of this radio. Despite this it is still reasonably intuitive and with a little practice is easy to use. The display is well lit when needed and readable, showing all necessary information including

battery voltage, volume level, S meter, frequency, memory number, alphanumeric memory label, plus all the other usual items.

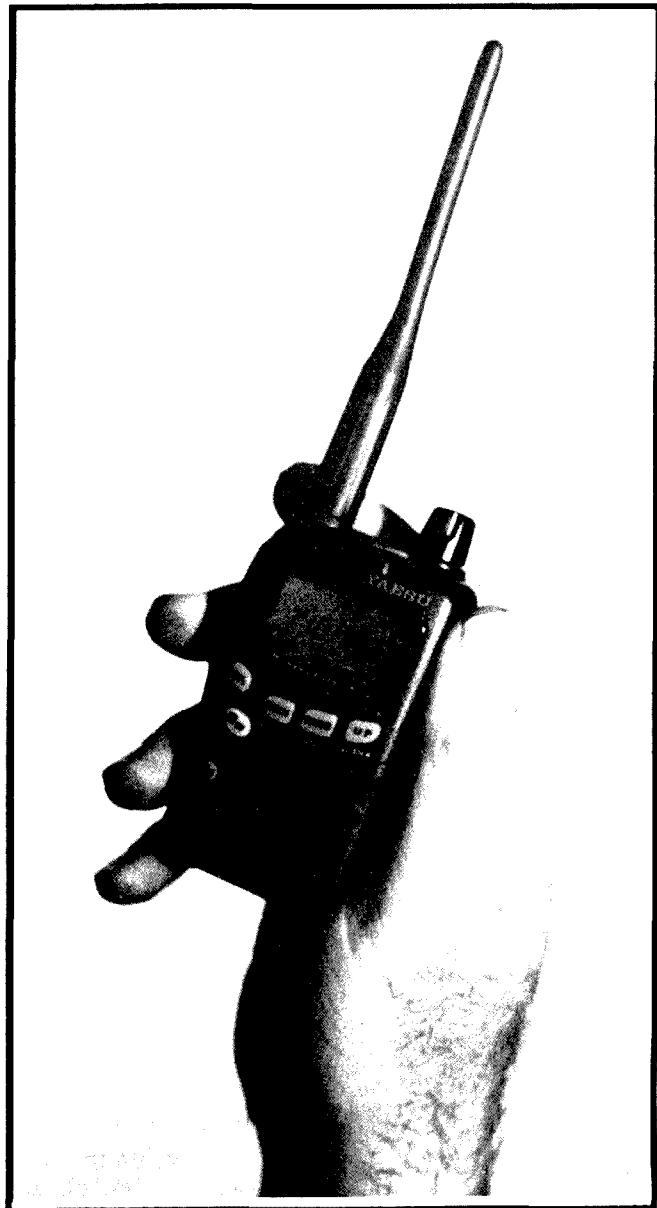
Audio quality and volume is remarkable given the size of the speaker. This is especially true in wide band FM Rx mode in the FM broadcast band. While it is not stereo it still compares very favourably with many of the portable broadcast sets available. One compromise with the 0.5-1.7 MHz range is that the display does not show the frequency; instead the S meter display is used as an analogue bar graph indication of relative position in the band.

This is not that big a problem as there are ten memories dedicated to this band which can store six character alphanumeric labels, making it very easy to select the required station.

One of the other first things to notice is the antenna conn-

ector. To fit in with the small size, Yaesu have used an SMA socket rather than the more common BNC socket. This will mean something to hams into microwaves, etc, but your average ham is unlikely to have sets of adapters for these connectors and they are not the sort of thing you will find as a standard component in the local stores. Luckily, Yaesu also have an optional SMA to BNC adapter which I would see as a must for most people who want to use external antennas.

On the subject of accessories there is really very little else to buy as the set has the tone decoder abilities built in that are



The VX-1R miniature hand-held dual band (2 m and 70 cm) FM transceiver.
(Photo by Vicki VK3LT)

normally options with other rigs enabling CTCSS, DCS, etc with 'no more to pay'. One option that I would advise considering, however, is the Yaesu computer programming interface and application. This allows very flexible control and programming of the rig from your PC via a cable plugged into the earphone socket.

The packaging is pretty basic cardboard, but the manual and circuit diagrams are detailed and well written. It is also worth commenting on the supplied charger-cum-power-supply, as the one that came with it is obviously not the Yaesu one illustrated in the manual. In fact, the charger is a fully regulated multipurpose plug-pack (complete with voltage selector switch and multiple connector) set on the six volt position. The supplied power units will have the switch glued in the six volt position to avoid accidentally setting it on 12 volts and frying the set. While the set does tell you the battery voltage at switch-on, you would still have to have noticed that, and if you just plugged it in to charge without turning the set on it may be the battery

that will suffer. Despite this, the plug-pack looks well made. Having this as a general purpose unit could be useful, particularly as it has the mains pins orientated so that the normal problems of trying to connect a plug-pack to a low power point will not be a problem.

Much has been said, in various discussion groups on this set on the Web (it's been out in the US for a year or so), about the clip on the back being flimsy and not gripping well. I can see what people are talking about, but this would only be a problem if you want to wear the VX-1R as a semi-permanent belt ornament.

I had no trouble carrying this set wherever I wanted by just putting it in my pocket. If you do want to let it all hang out there on your belt then it might be advisable to investigate the US companies that sell improved versions of the clip as they seem to get nothing but glowing reviews from users.

Technical Bits

Before discussing the circuit of the VX-1R it is worth spending a bit of time on the battery technology used in this set. Lithium-Ion (L-ion) technology is pretty new to ham gear. It has been around for a while, particularly in missiles and nuclear warheads, etc where its lightness, energy density and relatively low leakage are definite pluses, but it has only relatively recently started to appear in some up-market mobile phones and laptop computers.

Its big claim to fame here is the very long life times possible between charges, up to 21 hours of continuous listening to broadcast band AM spread over several days or weeks, or 14 hours of six seconds Tx, six seconds Rx, 48 seconds squelched on VHF. If you compare this performance on VHF with the just three hours possible using a standard Alkaline dry cell in the optional carrier, you can get some idea of just how good it is. In this example, over four times the capacity in something that can be recharged in two hours and weighs only 33 grams.

This all doesn't come for nothing, of course. L-ion batteries tend to cost a little bit more than NiMH which are in turn more expensive than NiCads. Add to this the note in the manual that the L-ion battery is only good for 300 charges before it starts to lose capacity, and

perhaps that AA pack isn't quite so bad an idea after all.

Even a quick glance at the circuits shows that this rig's heritage owes as much to the transistor radio as to ham communication equipment. In this case all the front ends and mixers, etc are normal silicon transistors. In fact the only FETs I can see are in the Tx power amps, and in a switching role in the power supply. This is pretty much the reverse of a normal ham rig, but it obviously helps to keep the price down while still delivering pretty good performance.

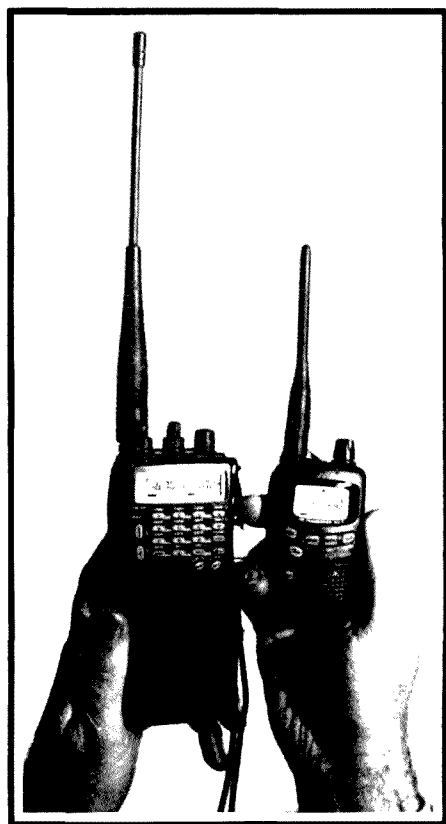
Unfortunately, I was unable to verify the quoted specs but on air tests lead me to suspect that they are pretty close. In particular I would have been interested in intermod and overload performance as the transistor mixers would tend to imply somewhat poorer performance here. However, the manual does not quote any figures for these and, as said, I was not in a position to measure them. For reference the more important specs given are:

Tx range 144-148 MHz and 430-450 MHz, high power 500 mW, low 50 mW.

Rx Sensitivity rated at better than:
5 μ V for 10 dB S/N 0.5-1.7 MHz
1.6 μ V for 12 dB SINAD 76-108 MHz
0.5 μ V for 10 dB S/N 108-137 MHz
0.16 μ V for 12 dB SINAD 144-148 MHz
15.8 μ V for 12 dB SINAD 170-222 MHz
0.5 μ V for 12 dB SINAD 300-420 MHz
0.18 μ V for 12 dB SINAD 430-450 MHz
15.8 μ V for 12 dB SINAD 470-800 MHz
5 μ V for 12 dB SINAD 800-900 MHz.

As a matter of interest the manual claims that the set is cellular blocked, that is it doesn't work on the frequencies used by analogue mobile phones. However, in the review set, even after a full reset to defaults, I had no difficulties listening to these frequencies. Actually there were no observable breaks in the coverage 76 to 999 MHz.

The circuit basically consists of a set of Rx RF front ends for Broadcast Band, VHF, UHF, and 800 MHz and up. The signals are then mixed with a VHF/UHF dual VCO (which also drives the Tx modules directly) and fed into either a narrow band or a wide band single IC IF chip. This amounts to being a superhet for 0.5-1.7 MHz, with a 455 kHz IF. For the rest it is a dual conversion superhet, with a first IF of 41.45 MHz, and a second



Compared to a relatively recent Yaesu dual band hand-held, the VX-1R looks positively tiny. (Photo by Vicki VK3LT)

of either 450 kHz for narrow or 10.7 MHz for wide. There are also numerous transistor switches dotted around the circuit to provide the power saving features which basically consist of a variable sleep time of either 200, 300, 500 ms or 1, 2 seconds, which can be set via a menu but which are not operable on the Broadcast, FM or TV bands.

The designer of this circuit has been quite ingenious providing lots of little unusual tricks. One is the ability to slightly shift the micro clock frequency just in case it happens to create a spurious signal on a needed frequency. This is done by having one digital output from the micro able to drop some more capacitance across the 4 MHz clock crystal. Another trick is the use of the same circuit as the volume control voltage to tune the broadcast band VCO with the voltage indication on the S meter. The 800 MHz and up front end also is very simple using basically a filter composed of two Cs and one L to filter the normal UHF VCO output for the appropriate harmonic on the way to feed the mixer.

Overall, as described above, the RF parts of the circuit are very simple. They have more in common with a conventional broadcast band set than a ham one; however, it still performs remarkably well compared to those sorts of boxes. The only lack in comparisons is that there is obviously no room in the case for even a small ferrite rod type antenna so AM broadcast band reception is reliant on either strong signals, and/or an external antenna. In practice it does remarkably well by just holding the small whip near a larger conductor such as house wiring, etc.

Operation

Operation of the VX-1R is straight forward. The frequency coverage is broken up into nine bands, most of which are obvious such as BC BAND is the 0.5-1.7 MHz broadcast band, and FM is mainly the FM broadcast band plus a bit, ie 76-108 MHz. From there on, however, the split up is a bit more arbitrary with AIR covering 108-137 MHz, V-HAM covering 137-170 MHz, VHF TV covering 170-222 MHz, ACT-1 (short for action band 1) covering 222-420 MHz, U-HAM covering 420-470 MHz,

UHF-TV covering 470-800 MHz, and ACT-2 covering 800-999 MHz.

Selecting a frequency then becomes a case of pushing the band button repeatedly to step through the bands until the required one is reached, at which point the set will, if in VFO mode, start at the so-called home frequency for that band (home frequencies can be set), or, if in memory mode, come up with the last memory used. If it is in VFO mode then, if the frequency required is close by, the dial knob is rotated in the appropriate direction with each click being a step. Or, if larger steps are needed, pressing the function key then the up or down key will temporarily make the step size one MHz. In memory mode the up and down keys will step through the memories.

Once on your desired frequency, the volume and squelch can be changed if required (I didn't have any problems leaving the squelch on the auto setting) by pressing the Vol button then using the dial knob to vary the volume. A similar method is used for squelch if needed. If you just want to use this set on memories it would be worthwhile spending a bit of time programming it up, most easily done with the optional computer control software, and then changing the default action of the knob to be volume.

In use on-air, the audio quality, both of the Tx and Rx in the ham bands and Rx in the broadcast bands, was surprisingly good from such a small package. Tx and Rx audio on two metres was especially good, sounding better than that produced from my old IC 2A, and the lower power levels seemed to make very little difference, at least in the situations in which I normally use a hand-held.

The VX-1R can be configured for either 52 or 142 memories, with the more powerful 52 configuration being the default. As far as I could see in Australia, and certainly in my case, there is no real benefit in the extra features of the 52 case, so I would recommend changing this to the 142 option via the power-on process described in the manual.

The only down side to this configuration that I could see was that you lose the ability to set the Tx and Rx frequencies independently, and to vary the band home frequencies. In either

configuration, however, memories can store Tx power levels, Rx mode, six character alphanumeric label, repeater offset, etc.

As well as these memories, there are 10 special ones for the 0.5-1.7 MHz band which can have labels, and other special function memories such as the 31 special search memories and 10 pairs of band limit values that don't use labels. These last two memory types are used in conjunction with scanning, as their name suggests. The smart scan with auto saving into the 31 memories for later review can be quite useful.

This smart scanning brings me to a couple of little niggles with the VX-1R.

The manual describes what sounds like a very useful initial start-up mode where you can get the rig to scan the FM broadcast and TV bands and to store the frequencies found into normal memories. The mode works; however, its usefulness was limited by the radio being just a little bit too smart.

Obviously it is set up to expect stations to have audio at XXX.750 MHz, which is fine for the TV bands, but it limits the number of FM stations found. I suspect that the problem is simply one of being configured for a slightly different band plan than that found in Australia.



The VX-1R alongside the removed battery pack.

(Photo by Vicki VK3LT)

Cover Story

There is a similar sort of problem with the automatic repeater offset feature which seems to be set for the US model, again slightly different from ours. Neither of these problems is particularly disastrous and they are easily compensated by a bit of manual intervention. However, they perhaps show some of the disadvantages of being in a relatively small ham market.

The VX-1R has many other features available via buttons or menus. In size and amount of time you can spend just playing with it, this is truly the ham version of a Tamagotchi.

Conclusion

This radio is basically an amazing toy for any radio amateur. The technology where a dual band hand-held can be put in such a small package that you can just about lose it in a suit pocket and think you have dropped it because it is so light, is incredible. Given the price and the functionality of this package I can see it finding its way on to many a ham's present wish-list.

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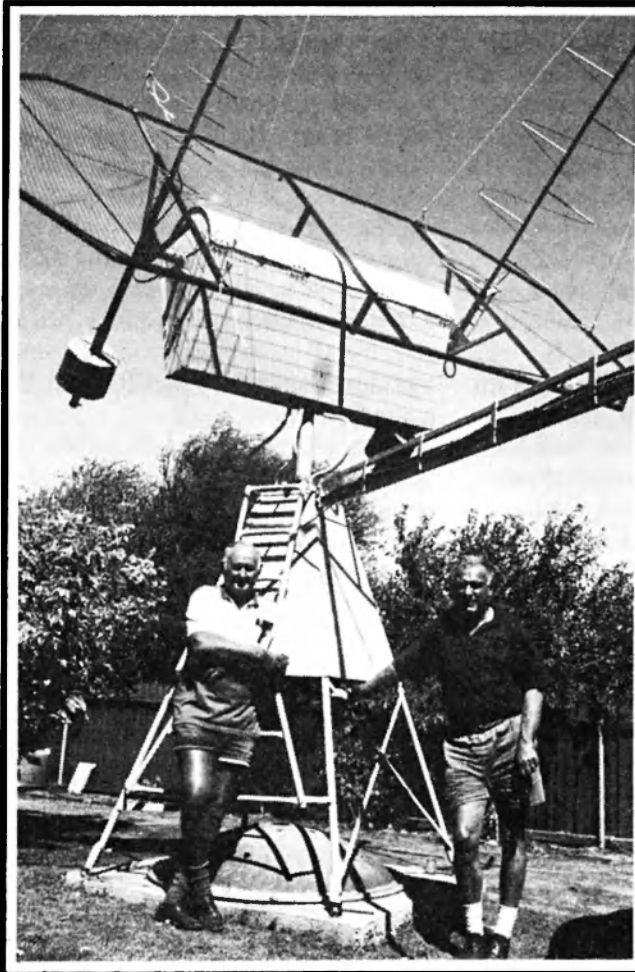
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Doug VK5GA and Tony VK5ZAI with Tony's home-made satellite tracking antenna powered by windscreen-wiper motors. (Photo courtesy of the Murray Pioneer)

Our cover photo this month is by courtesy of Doug Tamblyn VK5GA and Tony Hutchinson VK5ZAI who made contact quite frequently with Andy Thomas VK5MIR aboard the Russian Spacecraft MIR. Good publicity for amateur radio was achieved in the newspaper *Murray Pioneer*, published at Renmark, and on which this account is based.

Both of the operators worked Andy from their own stations (Tony at Loxton and Doug at Paringa), but the cover photo was taken by the *Murray Pioneer* photographer in Tony's shack. Tony was a student at the same school as Andy (St

Peters College in Adelaide), although some years earlier.

A few interesting details regarding the space mission are as follows: At the height of 390 km above Earth, places as far apart as Melbourne, Sydney and Ceduna were simultaneously visible. A small fire aboard MIR during March had temporarily raised the carbon monoxide level in the cabin but had been quickly controlled. Andy indicated that some remaining difficulties outside the spacecraft would need extra-vehicular activity (EVA) to put them right. (*The daily press and TV have subsequently reported two EVAs with video coverage by Andy on camera. Ed*)

It was suggested that Andy may have given some preference to working VK5s, but this was probably

"tongue in cheek". There were many thousands of radio amateurs around the world looking for a QSO with Andy on 145.985 MHz, so he was always busy on the occasions when more urgent activity did not take priority.

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Receivers

A Junk Box Regenerative Receiver

Peter Parker VK1PK
7/1 Garran Place, Garran ACT 2605
E-mail: parkerp@pcug.org.au
Home Page: www.pcug.org.au/~parker/

Introduction

Hands up all those who thought you'd never get to use all the variable capacitors and vernier reduction drives filling your junk-box. If you're one of these people, this project is for you.

Providing CW/SSB/AM reception of three HF amateur bands, this regenerative receiver was designed to be built by the experimenter with an overflowing junk box. Possibly the only concession to modernity is the use of solid state components rather than valves.

The completed set is a joy to use. Its performance is at least as good as a well-built valve regenerative receiver. Eight AA cells power the set. The internal battery minimises the risk of hum that so often mars the performance of simple receivers. The set tunes 3.5 to 10.5 MHz and is based on a design by Charles Kitchin N1TEV (*Ref 1*).

No attempt has been made at miniaturisation. With its large internal speaker, substantial tuning dial and sizeable knobs, this radio dwarfs most modern transceivers. The set's physical presence is only skin-deep, though; those who lift the lid are invariably disappointed at how little there is inside.

Circuit Description

Attenuator

Received signals must first negotiate the front-end attenuator. This consists of three series-connected capacitors switched by a four position rotary switch. The attenuator is only used when very local signals are being received. With some antennas, though, the received signal's

strength may actually increase when the attenuator is switched in. This occurs when the series capacitance used happens to improve the impedance match between the antenna and the RF amplifier stage. Of course, there is no real need for the attenuator to use a rotary switch and fixed capacitors; any 10-200 pF (not critical) variable capacitor that is electrically insulated from the front panel could be used instead.

RF Amplifier

The next stage is a grounded gate broadband RF amplifier. This boosts receiver sensitivity and isolates the regenerative detector from the antenna. Such isolation reduces RF radiation when SSB/CW signals are being received and allows the attenuator to be switched in without de-

tuning the receiver. The amplifier's output is coupled to the regenerative detector through L1.

Regenerative Detector

This stage forms the heart of the receiver. The incoming signal is selected by a tuned circuit whose resonant frequency can be varied from 3.5 to 10.5 MHz. This is then coupled to a FET detector.

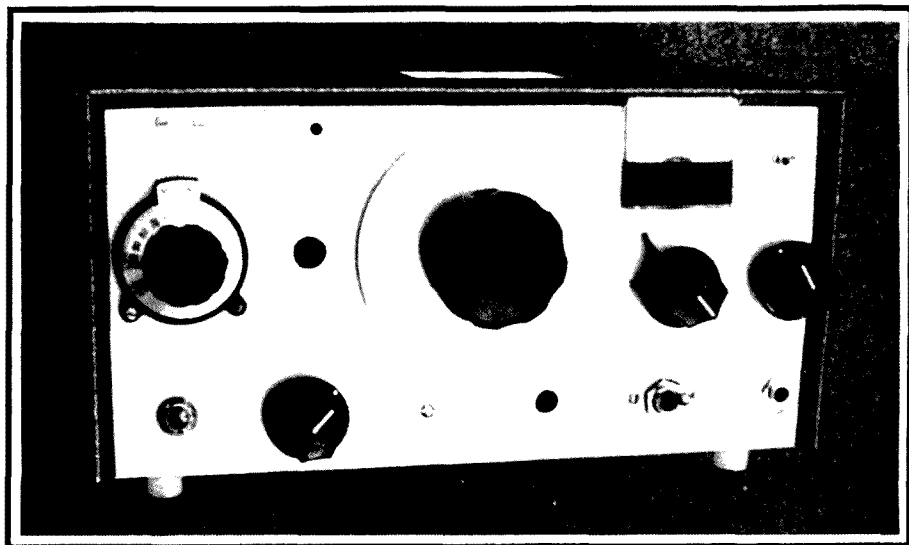
A simple FET detector has low gain and poor selectivity. However, by applying positive feedback (or regeneration), both the gain and selectivity of the stage improve dramatically. Because the amount of regeneration needed varies as the receiver is tuned, it needs to be made user-adjustable.

When receiving AM signals, the regeneration control should be set just short of when the receiver starts to oscillate. Advancing the regeneration control so that the receiver is just oscillating allows reception of SSB and CW signals.

The supply voltage to the regenerative detector is regulated by a Zener diode. This, along with solid mechanical construction and good quality components, contributes to the frequency stability, smoothness of regeneration and overall performance of the receiver.

Audio Amplifier

A conventional LM386 audio amplifier is used. The gain of this stage is sufficient to allow speaker reception, provided an efficient antenna is used.



Completed Regenerative Receiver.

Crystal Calibrator

The crystal calibrator stage (Fig 2) is optional. However, if you have a spare 2 MHz crystal, it is worth having so that you can check the accuracy of the dial calibration chart from time to time. It's best to do your calibrating with the antenna disconnected, so that you hear nothing other than the calibrator's signal. Because the calibrator's signal is not modulated, have the detector oscillating as you would if listening to a CW or SSB signal. Calibration points are 2 MHz apart (at 4, 6, 8 and 10 MHz). More advanced constructors could add frequency divider ICs to obtain closer calibration points.

Battery Voltage Meter

This is an extravagance. It was included purely because there was a meter already mounted on the box I wanted to use. To save power, it is switched in only when required. The circuit used here is a simple linear-reading voltmeter, reading 0-20 volts.

Refinements include expanding the scale to give it better resolution between 10 and 14 volts and adding a separate audio amplifier immediately following the regenerative detector to make an S-meter

circuit. Those wishing to economise could omit the battery checking function altogether, or use an LED in place of the meter.

Construction

With many projects it is possible to assemble the circuit board first, test it, and then decide if it is good enough to put in a case. This receiver is different. Its performance depends greatly on the quality of its mechanical construction. Work on the mechanical part of the project takes much more time than the electronic assembly. However, it is hoped that possessing a well-finished case and chassis generates enough enthusiasm to spur the builder to complete the project.

The first task is to gather together all your vernier drives, tuning capacitors, speakers, off-cuts of printed circuit board material and, of course, any spare metal cases. The object of this exercise is to plan what parts are to be used and how they are going to be mounted inside the box.

The most important point here is the internal chassis and how it holds the main components. In particular, the mounting of the variable capacitors, coil former and receiver circuitry needs to be considered.

With the parts I had on hand, a deep U-shaped chassis made from three pieces of double-sided printed circuit board material was the best solution. One end of the U runs parallel to the front panel, the other end is nearer the back panel, while the bottom of the U is screwed to the bottom of the case (the nuts being soldered to the inside of the U). The top of the U is left open for ease of access for construction and adjustment.

When using double sided PC board material as an internal chassis, make sure both sides of the board are earthed. You can do this by bending a 1 cm length of tinned copper wire into a small U (like a hairpin) over the edge of the board and soldering the wire to the board on both sides.

The main tuning and regeneration controls are both mounted inside the U, as is the RF portion of the receiver's circuitry and the coil former.

Because the U does not extend along the full width of the case, a piece of aluminium has been bent to form a mounting bracket for the fine tuning variable capacitor. The mounting screws for this can be seen in the photograph near the extreme top left of the front panel.

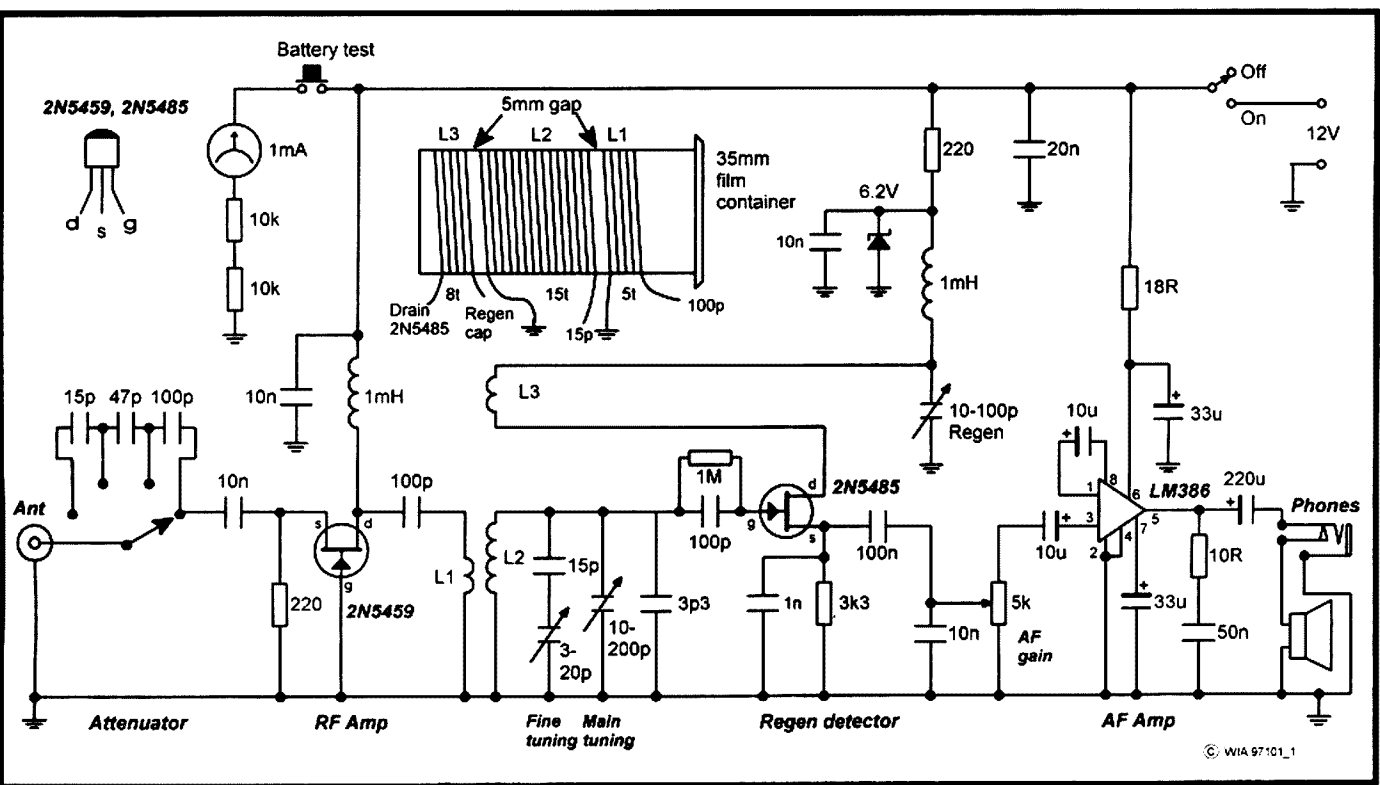


Fig 1 - Schematic diagram of the Junk-box Regenerative Receiver.

As mentioned before, this receiver makes liberal use of vernier dial drives. The best you have should be reserved for the main tuning control (centre of photo). A smaller vernier drive with a dial is ideal for the fine tuning adjustment (just left of main dial). A reduction drive on the regeneration control (just below the meter) makes the receiver easier to use. A dial is not necessary here; however, a red pointer made from a short length of stiff insulated wire soldered to a small eye lug screwed to one of the dial mounting holes is a handy addition.

The RF portion of the receiver is constructed on a piece of printed circuit board material. No holes were drilled; components connecting to earth were simply soldered to the board. Other components are soldered across them. The whole assembly is quite rigid. The optional crystal calibrator uses similar construction.

The coil is wound on a 35 mm photographic film container. Other, more rigid materials could also be used and would probably improve the set's frequency stability further. Windings are spaced approximately 5 mm apart. Further information on the coil is included in Fig 1.

The LM386 audio stage was built on a small piece of matrix board. Four PC board pins were used to anchor this to the internal chassis.

Testing/Operation

First test the AF amplifier section of the receiver. Prodding pin 3 of the LM386 with a screwdriver or antenna wire should produce a click or buzz in the headphones. If this is heard, you can be fairly sure that this stage is operating correctly.

Next check the operation of the regenerative detector. The most important sign that it is working is whether it can be made to oscillate when the regeneration control is advanced towards maximum capacitance. Failure to oscillate could be for the following reasons:

1. L3 connections reversed;
2. Insufficient turns on L3;
3. L3 not close enough to L2;
4. Maximum capacitance of the regeneration control insufficient; or
5. Other wiring errors.

By connecting an antenna, switching the attenuator completely out, turning the AF gain to near maximum, and tuning across the band while keeping the regeneration control on the point of oscillation, it should be possible to hear short-wave broadcast and other stations, particularly at night. Set the Fine Tuning control to half (50 on dial) and use the main dial to find the band of interest. Most tuning within your chosen band can be done with the fine tuning control; even SSB signals should be quite easy to tune in. Use the attenuator only if signals are very strong.

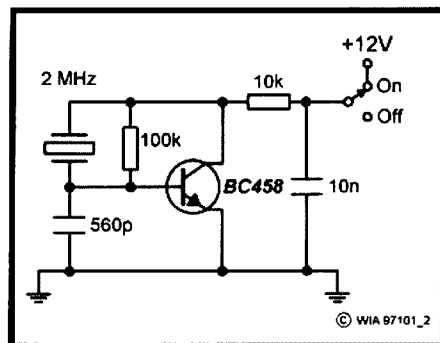


Fig 2 - Schematic diagram of the Crystal Calibrator.

With signals of known frequency (eg broadcast stations, amateur activity, WWV/VNG) it should be possible to get an idea of the set's tuning range. Ideally the receiver should cover 3.5 - 10.5 MHz. If 80 or 30 metre band coverage is missing or partial, add or remove turns from L2 to alter the tuning range. At the same time, check that it is possible to make the detector oscillate through the whole tuning coverage. Perform all coil adjustments and calibrations with the Fine Tuning control set to 50.

Once satisfied with the frequency coverage, make a calibration scale for the receiver and tape it to the case. Amateur, broadcast, and time standard signals can assist calibration. Also use the 2 MHz calibrator to generate marker signals at 4, 6, 8 and 10 MHz.

The prototype was tested with a 10 MHz half wave dipole fed with 300 ohm feeder. Quality speaker reception of WWV and broadcast stations near 10 MHz was possible, but because the antenna's efficiency fell as the frequency dropped, headphones were needed for reception of lower frequency signals. However, many SSB/CW amateur signals on the 3.5, 7 and 10 MHz bands were heard.

Frequency stability was good, and it was possible to bring the set smoothly into regeneration. A pleasing characteristic of this receiver, compared to others, is that satisfactory reception is possible across the entire 80 metre band without having to touch the regeneration control.

Reference

1. *Radio Communications*, April 1997 (Technical Topics)

Parts List

Semiconductors

- 1 6.2 V Zener diode
- 1 BC548 NPN
- 1 2N5459 FET
- 1 2N5485 FET
- 1 LM386 audio amplifier IC

Resistors

- 1 10 ohm
- 1 18 ohm
- 2 220 ohm
- 1 3.3 k ohm
- 3 10 k ohm
- 1 100 k ohm
- 1 1 M ohm
- 1 5 k potentiometer (AF gain)

Capacitors

- 1 3.3 pF NPO disc ceramic
- 2 15 pF disc ceramic
- 1 47 pF disc ceramic
- 3 100 pF disc ceramic
- 1 560 pF disc ceramic
- 5 0.01 μ F disc ceramic
- 1 0.02 μ F disc ceramic
- 1 0.05 μ F disc ceramic
- 1 0.1 μ F disc ceramic

- 2 10 μ F electrolytic
- 2 33 μ F electrolytic
- 1 220 μ F electrolytic
- 1 3-20 pF variable capacitor (fine tuning)
- 1 5-100 pF variable capacitor (regeneration)
- 1 10-220 pF variable capacitor (main tuning)

Other

- 1 2 MHz crystal - Dick Smith Z-9098
 - 2 1 mH RF choke
 - 1 1 mA meter movement
 - 1 Metal case - 305 x 150 x 200 mm - Dick Smith H-2814 suggested
 - 3 SPST switch
 - 1 4 position rotary switch (attenuator)
 - 3 vernier reduction drive - Dick Smith P-7170/P-7172 or better
 - 1 SO239 antenna socket (or two binding posts)
 - 1 8 x AA battery holder
- PC board material, mounting hardware, coil former, wire.

Note

The type of FET transistors used is unlikely to be critical. Indeed, both the RF amplifier and the regenerative detector could use the same type of transistor. Substitutes include the MPF102 and the 2N3819.

Technical

Technical Abstracts

Gil Sones VK3AUI
 C/O PO Box 2175
 Caulfield Junction VIC 3161

Simple VHF Receiver

A simple receiver covering 49 to 55 MHz was published in *QST*, December 1997, by Charles Kitchin N1TEV. The receiver was a super-regenerative design using two general purpose FETs and an IC audio amplifier. It was intended for construction using 'dead bug' or 'ugly' construction where components are soldered together above a piece of circuit board rather than on an etched circuit board.

The circuit is shown in Fig 1. The tuning capacitor C3C should be mounted

directly to the ground plane circuit board and should not be attached to the panel. This is to ensure a single point short earth connection. An insulated mechanical stiffening attached to the front panel would be OK. C3C is a small 50 pF variable.

Capacitor C2 is shown as a gimmick capacitor. This is two one inch long pieces of #20 insulated hook-up wire twisted together. Use thin insulated wire or try a one or two pF capacitor for C2.

RFC2 is shown as a 33 microhenry RFC, but may require adjustment to get

the detector oscillating. Try other values or remove some turns until oscillation is achieved. Individual components and layouts may make this adjustment necessary.

The short form parts list is given in Table 1. Most components are not critical.

For two metre operation you could try omitting C3A and C8A, change C3B to approximately 15 pF, change C3C to a 15 pF variable, change C4 to 2 pF, change RFC1 and RFC2 to 15 microhenries, and make L1 three turns one inch long.

The 1 k resistor and 6.8 V Zener diode before the regeneration control will also be needed for higher bands but are not needed at six metres. The resistor and Zener are shown in the inset in Fig 1.

The quench waveform can be adjusted as shown in Fig 2.

The CRO probe is made into a loop as shown at Fig 2A and coupled to the detector tuned circuit. The quench waveform should be adjusted to be near to a sine wave. In Fig 2 the waveforms at

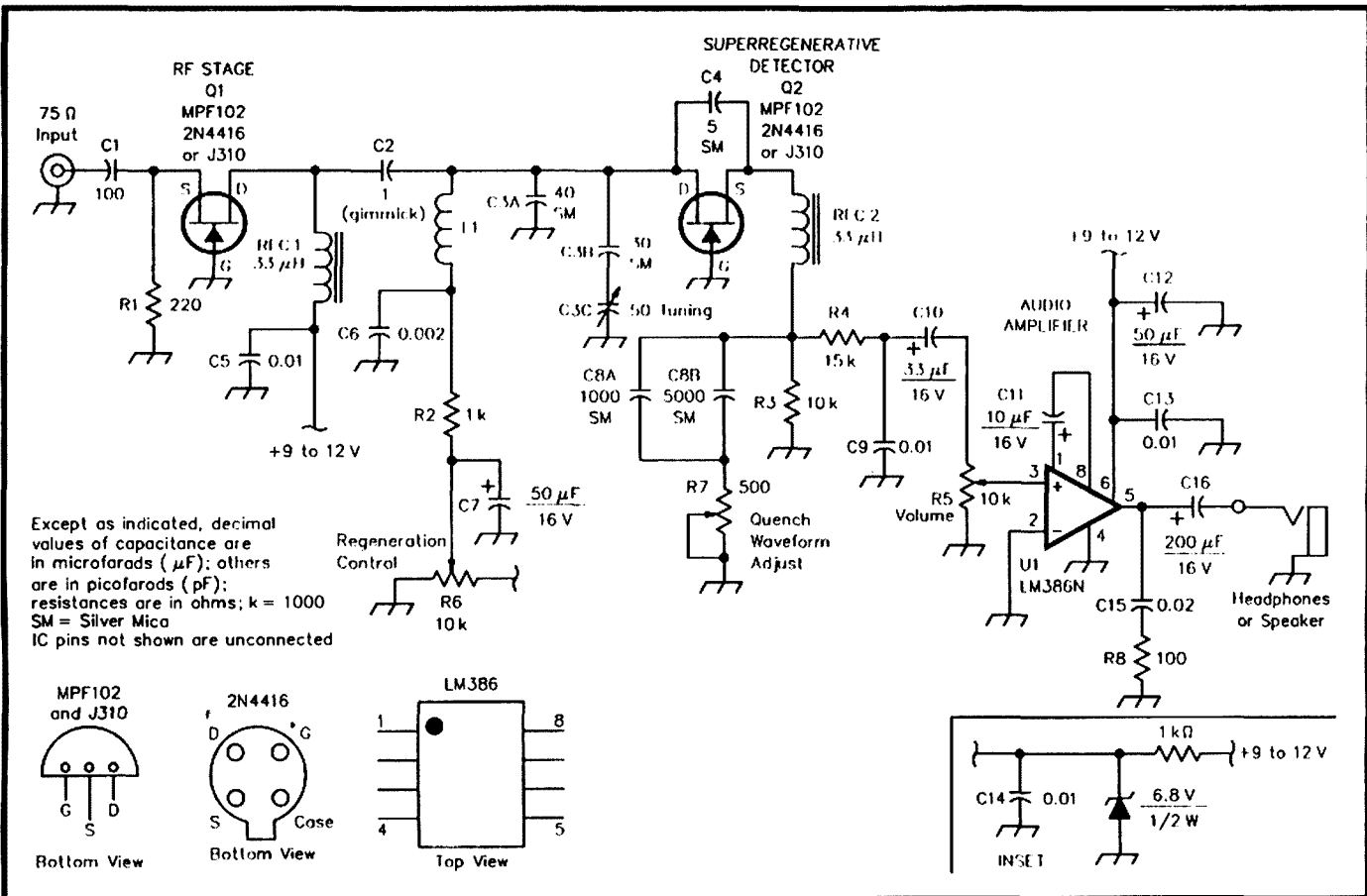


Fig 1 - Schematic of the VHF receiver.

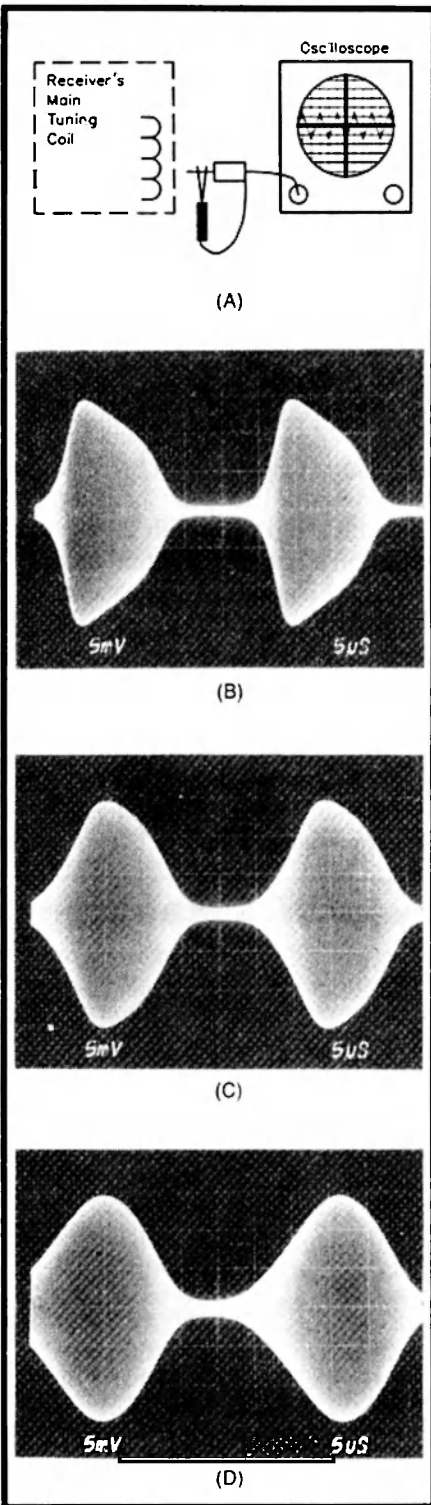


Fig 2 - Quench waveform adjust.

B, C and D corresponded to R7 set to 0 ohms, 250 ohms, and 500 ohms respectively. Alternatively, just jockey the regeneration and quench controls for best operation. The aim is to have a smooth operation and the quench adjustment is to minimise bandwidth and maximise sensitivity.

Table 1 - Parts List

C2	Gimmick capacitor
C3C	50 pF variable
C7, C12	47 µF 16 V electro
C10	33 µF 16 V electro
C11	10 µF 16 V electro
C16	220 µF 16 V electro
L1	7 turns #14 AWG (0.25 inch dia) air core 0.75 inch long
R6	10 k 10 turn pot
RFC1, RFC2	33 microhenry RFCs

Time Domain Reflectometer

A Time Domain Reflectometer or TDR is used to spot discontinuities in cables and to determine impedance and cable length. There are TDRs for optical fibres too. They are useful for spotting dodgy connectors and for troubleshooting many cable problems. A TDR consists of a pulse generator and an oscilloscope in its basic form. They have been around for many years and a version was used with the old open wire telephone lines.

In *RadCom*, January 1998 issue, a pulse generator is featured which can be used with an oscilloscope to provide a Time Domain Reflectometer. This useful device was originally published in *Electron* in February 1997 by Martin Beekhuis PA3SDC and Klaas Robers PA0KLS. The reprint in *RadCom*, January 1998, appeared in the *Eurotek* column of Erwin David G4LQI who translated the original.

The TDR pulse generator is shown in Fig 3. To use it you plug a BNC Tee connector into the vertical input of your CRO. The pulse generator is then connected to one of the arms of the Tee connector and the cable to be measured is connected to the other arm of the Tee

connector. The pulse width is adjusted to the narrowest your CRO can display. This is the condition for maximum sensitivity. The pulse repetition frequency is set high enough to get adequate brightness but low enough to measure cables up to 200 metres long. The adjustable trimmer capacitor sets the pulse width.

The ICs used are a 74LS132 and a 74LS00. If you have a fast CRO then you should replace the 74LS00 with a 74S00. You may need to externally trigger the CRO time base from pins 6, 9 and 10 of IC1.

The sweep calibration of your CRO provides the calibration of the TDR. At a sweep speed of 0.1 microsecond per cm, each 1 cm division represents a path length of 30 metres in an air dielectric cable. In a solid poly dielectric cable such as RG-213, the 0.66 velocity factor means that the path length becomes 20 metres. Since the pulse must travel both ways through the cable this represents a 10 metre length of cable.

Just remember that the pulse travels at 300,000 km/sec in free space and is slowed by the velocity factor of the cable you are measuring. Also remember that the pulse travels out from the generator to the cable end and then returns.

The pulse generator will be useable with a 10 or 15 MHz CRO but obviously a faster CRO is desirable. Sweep speeds of under 100 nS per division are desirable as this corresponds to 10 metres per division for solid poly coax such as RG-213.

With this TDR pulse generator you can compare coax and find the length of coax lines. You can also see what your connectors are like. The impedance of unknown coax can be found by varying the termination to find the minimum

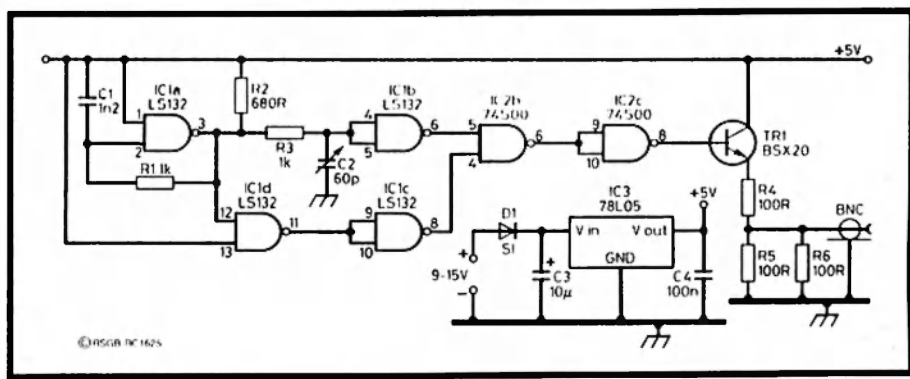
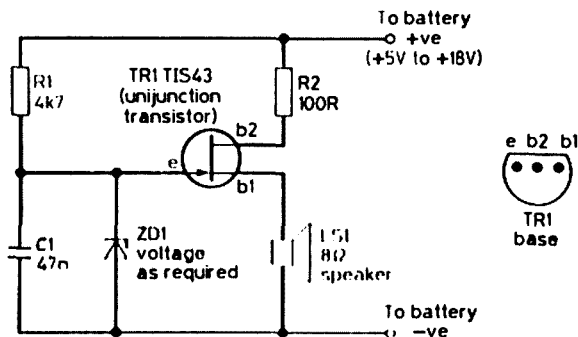


Fig 3 - Time Domain Reflectometer pulse generator.



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Fig 4 - Low voltage alarm.

discontinuity from the termination. The velocity factor of a cable can be found by comparing the electrical length with the physical length.

Low Voltage Alarm

When operating mobile or portable, the battery voltage requires monitoring so that it does not fall to a point where charging or even starting the vehicle becomes difficult. Many batteries should not be too deeply discharged and a vehicle battery can easily be discharged to the

point where starting the vehicle is difficult. You can use a voltmeter but you must continually monitor it. In *RadCom* for April 1998 a simple monitor was described by Steve Ortmayer G4RAW.

The circuit in Fig 4 uses a unijunction transistor and a Zener diode together with a couple of resistors, a capacitor and a small loudspeaker which gives an audible alarm. This should allow you to cease operation and commence recharging. It does not disconnect the load and relies on the remaining battery charge for its operation.

The Zener voltage is not the same as the alarm voltage and some experimentation may be required if different voltages are required or if a different unijunction transistor is used. The Zener voltages for different alarm voltages are:

Zener Voltage	Alarm Voltage
6.6 V	10.9 V
8.2 V	12.1 V
12 V	19 V

Reverse-a-Probe

The item in January 1998 *Technical Abstracts* brought a letter from Steve Mahony VK5AIM who had built a similar device some time ago. Steve had made his device when he had to test many diodes.

He built a device with a reversing switch on a scrap of board mounted on two banana plugs to plug into a meter. This simplified diode testing. This is an alternative construction to the probe-mounted version in the January 1998 *Technical Abstracts* which was the work of A W Edwards K5CN and was originally published in the *Hints and Kinks* column of Bob Schetgen KU7G in *QST* for August 1997. ar

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10 Watt AM, FM, CW,
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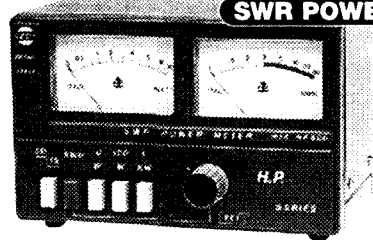
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New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of May 1998:

- | | |
|--------|-------------------|
| L30970 | MR K ROBERTSON |
| L30971 | MR T JOYCE |
| L30972 | MR D B HOLYOAKE |
| L60395 | MR K R MORRIS |
| L70150 | MR E W FERRIER |
| VK1AUS | MR S N TROTTER |
| VK1CP | MR P J COBDEN |
| VK1LF | MR L R FREEBODY |
| VK1ZMC | MR M CHENG |
| VK1ZPL | MR P H LONGWORTH |
| VK2HVR | MR V A WEEKES |
| VK3DAC | MR F R SWAINSTON |
| VK3FO | MR R MILNE |
| VK3GJZ | MR G ZIMMER |
| VK3MMM | MR W GRYPSTRA |
| VK3TXE | MR J COLLINGWOOD |
| VK3VOF | MR H H SCHICK |
| VK3VTX | MR G BARNES |
| VK3WC | MR T VASILJE |
| VK3WP | MR B A ENDERSBEE |
| VK7AF | MR J NICHOLSON |
| VK7IC | MR I CLEMENTS |
| VK7NAU | MR A STEVENS |
| VK7NRX | MR R BURN |
| VK7PN | MR P NEWMAN |
| VK7ZBG | MR M SCHROETER ar |

Repeater Link DTMF Code Options

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Packet: VK6UU@VK6BBR
E-mail: will@vale.faroc.com.au

Last month a circuit for a DTMF decoder, that included a code store and a latch, was presented. The code store was simple in design and easy to understand in operation. By using a three-input AND gate and storing the first two digits for a brief time, the third digit to the AND gate resulted in the output of the AND gate going high. Only that particular code would cause the output of the AND gate to go high; well almost.

If the first and second digits are sent reversed, then the AND gate also responds to this code and the output goes high.

For example, the code 123 and 213 are both valid for that particular circuit. This is not a problem but, for some applications, a completely unique code may be preferred.

Alternate Circuit

The accompanying circuit was sent to me by Mac VK6MM. By using a two input AND gate, and cascading the output of the first gate into one of the inputs of another gate, the valid reversed digit is overcome.

The circuit speaks for itself. Instead of a three-input AND gate, a two-input AND gate is used. Digit one is stored for a second or two and during this period if a second digit is received on the other gate the output of the AND gate goes high. This is then stored on gate one of the second AND gate, and when the third digit is received on the second gate input of the second AND gate the output goes high. Reversing any of the three digits does not result in the output of the code store going high. Only one code is valid.

Options

There are several options to this circuit. The circuit can be expanded for a four digit code by adding another cascaded AND gate and any higher code number you may want, just by adding another AND gate. The single AND gate is a two digit store code and this may be useful. The circuit is simple to understand and can be modified to your needs.

Modifications

Last month's circuit can be changed easily to use this code store circuit

without changing the three-input AND gate. Just tie one of the inputs high so the three-input AND gate becomes a two-input AND gate.

The three-input AND gate IC contains three AND gates, one of which was not used. By converting this IC from three-input to two-input you end up with three two-input AND gates, which is what is required.

Pin Numbers

I did not include the pin numbers of the IC on the circuit diagram as there are any number of AND gate ICs you can use, such as a 4081, 74LS08 or 74HC08, etc.

40 Metre Gateway Application Turned Down

The ACA have not approved the application for a licence for a 40 m gateway onto two metres. VK6's application for such a licence was turned down for two reasons:

1. No repeaters are allowed below 29 MHz; and
2. The gateway would transmit a signal in the absence of a received signal.

The ACA suggested that if we wish to pursue this issue we should approach the Federal WIA in order to make the necessary policy changes (we did this).

I will expand on this in next months *Repeater Link*.

ar

Winner of the WIA Membership Prize

Joe Janke VK3AU is the proud owner of a brand new Kenwood TM-V7A dual band FM radio after winning the membership renewal prize for 1997. The rig Joe received is a newer version of the one advertised.

Those who renewed their WIA membership during 1997, or were current three year or life members, went into the draw for this great prize donated by Kenwood Australia.

The winner was drawn by Ross Keogh from Strictly Ham, the Kenwood dealer in Melbourne. The draw was overseen by Federal Education Co-ordinator Brenda Edmonds VK3KT.

ar

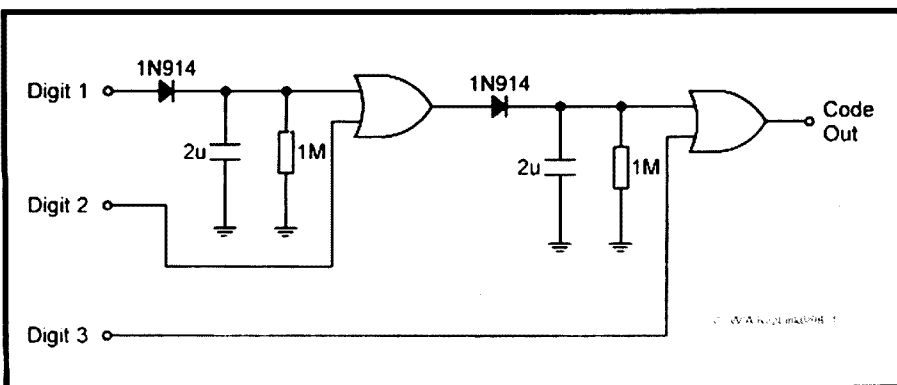


Fig 1 - Schematic of the alternate DTMF code store.

■ Novice Notes

The Versatile End-Fed Wire

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E-mail: parkerp@pcug.org.au
Novice Notes Online: <http://www.pcug.org.au/~parkerp/nonline.htm>

A piece of wire of almost any length can be used as an antenna on the HF bands. However, just because an antenna can be made to work is no guarantee that it will perform efficiently. This article will initially concentrate on the half wavelength of wire and its use as an effective multi-band antenna. Information on a simple antenna coupling unit and tuning indicator for use with these antennas is provided towards the end of the article.

Length

It was mentioned above that the actual length of wire used in an end-fed antenna is not critical. However, some lengths are easier to use than others, particularly if multi-band capability is required. Also, very short antennas (significantly less than a quarter wavelength on the operating frequency) are inefficient, making it hard to put out a good signal.

A length of one quarter wavelength (ie 20 metres on the 80 metre band) is commonly suggested. Though such antennas do work, an extensive ground system or counterpoise is required for

best performance. Ground systems can require considerable time and effort to install and detract from the extreme simplicity of these types of antennas.

An alternative is to use a wire of one half wavelength in length on the lowest operating frequency. An extensive earth system becomes much less important. Indeed, the author has had good results whilst using no earth at all. However, for certain other reasons (explained later) some earthing is desirable.

The antenna described here is forty metres long, or a half-wavelength at 3.5 MHz. As mentioned before, a substantial earth is not required. Because a half-wavelength piece of wire exhibits a very high end impedance at the operating frequency (and its multiples), some form of coupling unit between the transceiver and antenna is required. Its function is to efficiently transform the transceiver's 50 ohm output impedance to the antenna's high feed-point impedance. Whether a wire antenna has a high or low impedance is important because it affects the type of coupling unit required, as well as the need for an earthing system.

So, what is the impedance of this antenna on bands other than eighty metres? We already know that a wire that is a multiple of a half wavelength exhibits a high impedance at the feed-point. At 21 MHz (15 metres) a forty metre wire is approximately six half-waves long. On 28 MHz (10 metres) it is eight half-wavelengths. Similarly, our wire is several multiples of a half wave on other HF bands such as 40 and 20 metres. This means that the antenna will always have a feed-point impedance appreciably higher than 50 ohms and will not require much of a ground system on all bands. It is for these reasons that 40 metres is a good length for an end-fed wire antenna for the HF bands.

Benefits and Limitations

Because it is fed at one end, people whose house is near one boundary of the block will probably find this antenna easier to put up than a half-wave dipole, which is fed in the centre. Another advantage of this antenna is that no separate feed line is required. This makes it particularly attractive for portable use as coaxial cable can be quite bulky.

What are the disadvantages of this type of antenna? The first is that it requires a matching unit to operate. Each time you change band you will need to adjust this for best impedance match between transmitter and antenna. Another risk with these types of antennas is RF in the shack. Nevertheless, these two problems are not insurmountable, and the end-fed wire is one of the most cost-effective multi-band antennas available.

Erection of Antenna

The antenna should be as high as possible. Have as much of the wire as possible running horizontal, or nearly so. However, if this is not possible, don't despair; your antenna will still work. The antenna is not particularly directional, especially on the lower frequency bands, so orientation is not that critical.

The type of wire used is also not critical. Medium gauge stranded insulated wire has given good service in the author's antennas. Ordinary egg-type insulators can be used to suspend the wire. As an alternative to purchasing these new, insulators can be made from short lengths of plastic water pipe or conduit.

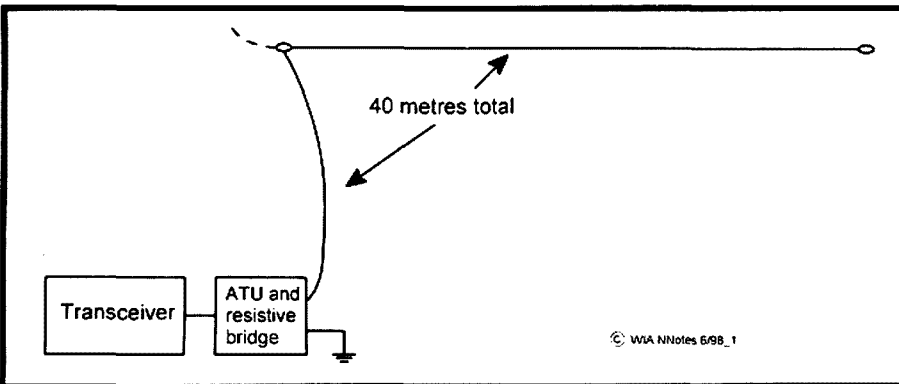


Figure 1 - End-fed antenna system.

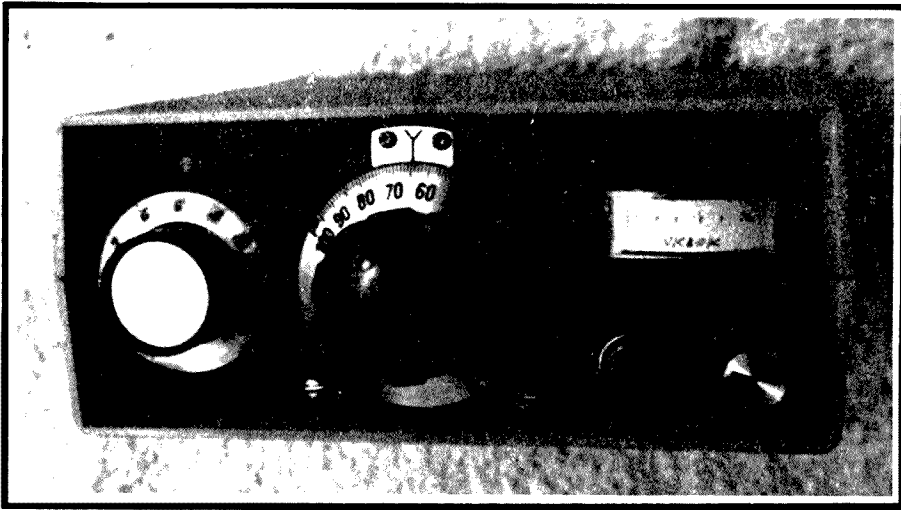


Photo 1 - Front panel of L-match and resistive antenna bridge.

Either trees, chimneys or specially-made masts can be used to support the wire. Two such supports are normally required for these antennas unless your radio shack is on a second or third storey. In many cases the second support can be a tree in the backyard.

It is not necessary to climb this to mount the antenna; with a small lead sinker a fishing line can be thrown over a convenient branch. The sinker is then removed and the line tied to the antenna's insulator. While observing the sag in the antenna wire, pull the fishing line tight. Then release it a little and tie it off at a convenient point. Some sag should be allowed for in wire antennas to allow for movement of the supporting branch in the wind. Always observe the usual precautions about keeping the antenna away from power lines and public thoroughfares.

Coupling Unit and Resistive Bridge

The purpose of the coupling unit described here is to transform the transceiver's output impedance of 50 ohms to the higher impedance of the wire antenna. Between the matching unit and the transceiver is a resistive antenna bridge that is switched in to aid the adjustment of the coupling unit. Figure 2 is the schematic diagram for the complete unit.

An L-match circuit consisting of one adjustable inductor and one variable capacitor is used. This is simpler than most other antenna coupling units which require two or more variable capacitors,

a number of inductors and possibly a switch. This simple approach is possible as the unit is only required to match a limited range of antenna impedances.

The resistive bridge is used to show when the L-match is properly adjusted. Using it is similar to a standard SWR bridge in that you initially adjust the sensitivity control for full scale on the meter and adjust the L-match until the reading on the meter is zero (or close to it). However, the resistive bridge is unlike an SWR meter in that it does not have a forward/reverse switch. Also, it cannot be left in line while transmitting. Further information on operating the resistive bridge is given later.

Photo 1 shows the completed unit. The

variable capacitor adjustment is in the centre of the front panel. To its left is the ten-position rotary switch for the adjustment of the L-match inductor. The right-hand third of the panel is taken up by the resistive antenna bridge. Below the meter movement is the tune/operate switch and the meter's sensitivity control.

Photo 2 shows the inside of the L-match and resistive antenna bridge. The home-made tapped inductor is mounted just behind the rotary switch. Alongside the coil, behind the vernier drive, is the variable capacitor. Most of the remaining space inside the box is occupied by a piece of matrix board that holds the parts used in the antenna bridge. Because light weight was important, the prototype is housed in a commercially-available plastic box. Note that to accommodate the top of the vernier drive, some plastic has had to be shaved off inside the top lid of the box. This may be visible in Photo 1.

The variable capacitor pictured is a rare transmitting-type unit.

Unfortunately, these can be hard to come by. However, Daycom of Melbourne may be able to supply a suitable unit. An alternative is to cannibalise a variable capacitor from any valve broadcast receiver, or one of the older transistorised sets. Unless you are using very low power (a few watts), the small plastic dielectric types used in modern AM transistor radios are not really suitable.

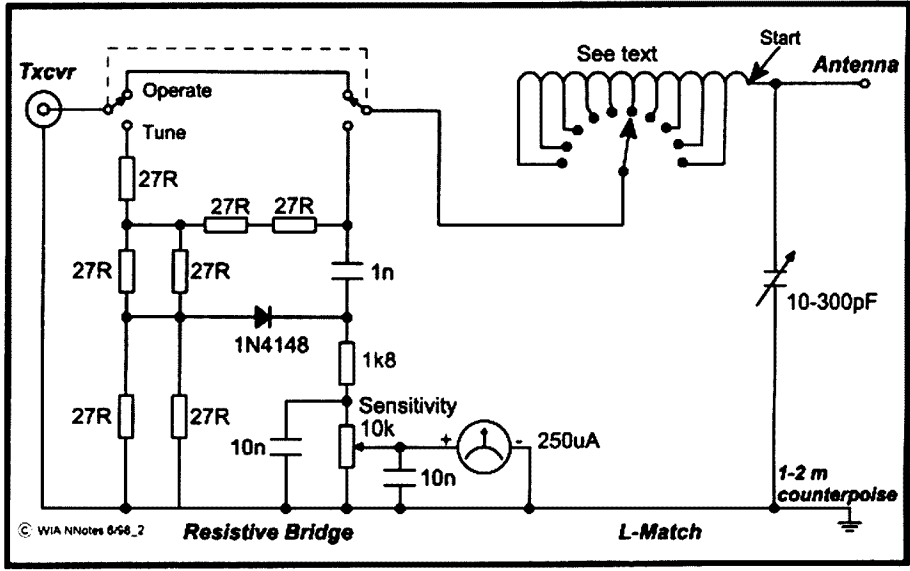


Figure 2 - Schematic diagram of L-match and resistive antenna bridge.

Hamfests, junk sales and the like are other good sources for these capacitors, even if you have to buy the radio that goes with it. Most variable capacitors that you'll see will have two or three sections or 'gangs'. Simply use only one gang and ignore the rest. The actual value of the variable capacitor is not important provided its maximum capacitance exceeds 150 or 200 picofarads.

A vernier reduction drive and dial adds greatly to the appearance of the finished product and makes adjustment easier. The one pictured came from Dick Smith Electronics. However, if your budget is tight and you are unable to find suitable second-hand reduction drives, this part can be omitted.

The rotary switch used was a salvaged wafer switch having ten positions. The switch originally had several sections, so the unwanted ones were removed and the rear of the shaft cut to size. It is desirable to have a switch with as many positions as possible to allow more precise adjustment of the coil. If you are unable to salvage a suitable switch, Dick Smith stocks a small 12-position rotary switch. These are suitable at low power levels, but the author has not tried them with 100 watts. If all else fails, an alligator clip and wander lead will be just as effective as the switch, though somewhat less convenient to use.

The tapped inductor is the other main component of the L-match. The coil in the photograph was wound on a piece of 25-30 mm diameter plastic tube. Ordinary thin insulated wire was used in the prototype. The number of taps needed is always one less than the number of positions available in your rotary switch - thus the coil here has nine taps. To make a tap, simply remove about 1 cm of insulation with a knife, form the bare portion of the wire into a hairpin loop,

Table 1

Switch position	No of turns from start of coil
1 (fully anti-c/wise)	55
2	30
3	20
4	13
5	9
6	6
7	4
8	3
9	2
10 (fully c/wise)	1

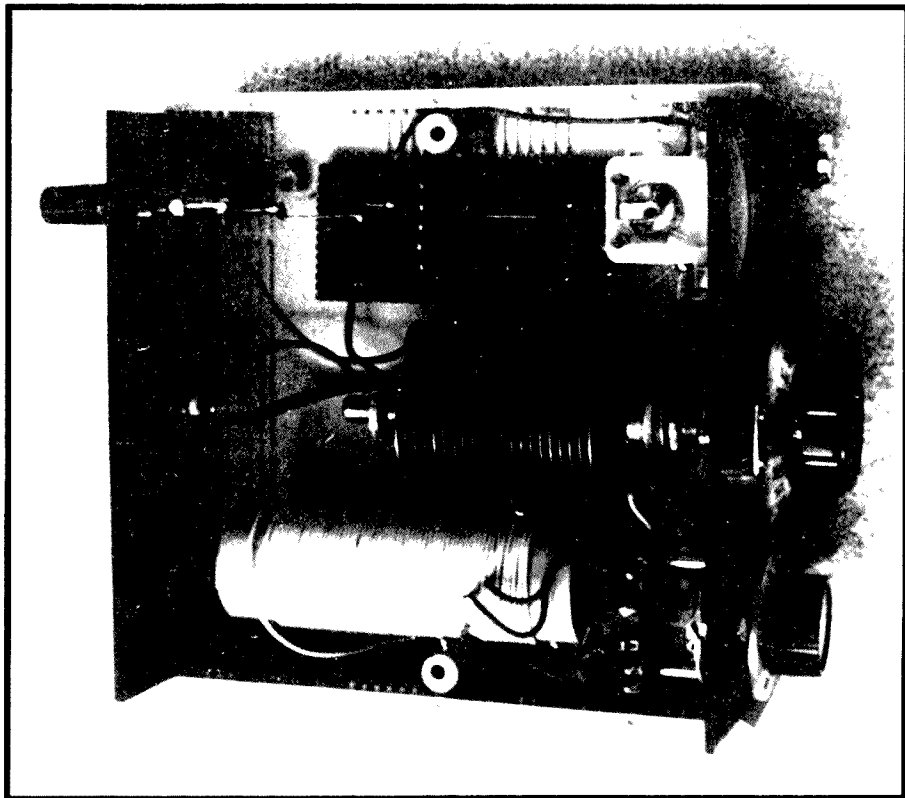


Photo 2 - Inside of L-match and resistive antenna bridge.

twist and solder. Hold the iron on the joint for only the minimum amount of time necessary to prevent the insulation melting off the wire.

Table 1 gives the coil taps used on the prototype. Note that the start of the coil is connected to the antenna socket and variable capacitor and the wiper of the switch is wired to the antenna section of the Tune/Operate switch.

The end of the coil whose taps are closest together should be nearest the switch. The reason for this is that these taps are likely to be used on the higher frequency bands, where the effects of stray inductance are more significant. It is also for this reason that all connections between the switch and the coil should be short and thick. The coil is attached to the bottom of the case with a pair of bolts, nuts and 10 mm stand-offs, which can be made from an old straight-sided ball point pen.

Transceivers with rotary band switches normally have the lower frequency bands (eg 80 metres) near the anticlockwise end of the switch's rotation and the higher bands (eg 10 metres) selected when the switch is turned clockwise. Similarly, when you

turn the VFO knob of your transceiver clockwise, the frequency selected will increase.

The controls on the prototype behave in a similar way. This is achieved by switching in the whole coil (which may be required on low frequency bands) when the rotary switch is turned to its fully anticlockwise position (position 1 in Table 1 above) and successively smaller portions of the coil as the switch is moved clockwise (position 10 in Table 1 above).

These smaller sections of the coil will be required when operating on higher frequency bands such as 10 and 15 metres.

The variable capacitor is configured in a similar way; as the reduction drive is turned clockwise, the capacitance is reduced, and the unit is tuned to a higher frequency. However, it is important to note that this cannot be achieved with some variable capacitors because a clockwise movement in the shaft increases rather than decreases the capacitance.

Most of the parts for the resistive antenna bridge are mounted on a piece of unclad matrix board, which is mounted to the case with screws and stand-offs.

Component values are not particularly critical except for the seven 27 ohm resistors. The function of these resistors is to provide a reasonably constant 50 ohm load for the transceiver when the L-match is being adjusted. For this reason they will be required to dissipate a fair amount of RF power. Two-watt resistors were used in the prototype. This proved adequate for use with a twenty watt transceiver provided the carrier was wound down to 5-10 watts and tuning-up was completed in a reasonably short length of time.

Many modern 100 watt transceivers can be wound back to produce the few watts required for this tune-up process.

No accidents have been had with the prototype unit. However, if you routinely wish to use it with high power equipment, and have a habit of forgetting to wind the power back, it should be possible to replace each 27 ohm resistor with four two-watt 100 ohm resistors to increase the unit's power handling capacity.

Do not be tempted to use wire-wound resistors - their power ratings may look attractive, but their self-inductance makes them unsuitable for a project such as this.

The Tune/Operate switch is a medium-sized DPDT unit. Again, this has given reliable service with 20 watt equipment. However, it might be wise to use a larger type if you intend to use this unit with 100 watt gear.

Other parts are not critical. The panel meter in the prototype was salvaged from a non-working CB transceiver. The scale was whited out (using correction fluid) and a new one written over it with Biro. This operation calls for a fair degree of manual dexterity - it is easy to damage the meter movement if you are careless. If in doubt, leave the meter as is. The variable resistor could also be a salvaged item; in this case the volume control from a radio or a tape recorder will be fine.

A pair of binding posts was used for the antenna and earth terminals. Use colour coding to avoid confusion. The connection to the transceiver is either via a BNC or SO-239 socket.

Coaxial cable should be used between this and the transmitter section of the Tune/Operate switch to minimise stray capacitance and inductance. Either RG-58 or RG-174 will be satisfactory.

Adjustment and Use

Adjusting L-type couplers is simple. Set the inductance for maximum noise in the receiver. Then adjust the variable capacitor to obtain a further increase in noise. Apply a few watts carrier and switch to 'Tune'. Position the sensitivity control so that the meter is reading full scale. Adjust the variable capacitor for a dip in the reading on the meter. If it is not possible to get a zero reading, try a different combination of coil and capacitor settings until this can be achieved. At this point the system is tuned up, and the unit may be switched to 'operate'. This step bypasses the resistive bridge and allows the full output from the transceiver to reach the antenna. Note that when changing bands or making significant frequency changes within a band, this process should be repeated to assure full power transfer.

A counterpoise may or may not be required. Because the antenna is high impedance, adding one will not normally boost radiation efficiency or materially affect the settings of the L-match. However, in some cases, going without a counterpoise can cause RF to get back into the transceiver and spoil operation. A short length of insulated wire connected to the earth terminal of the L-match minimises this risk. One or two metres is usually enough.

In practice, the system described has proved easy to use, and represents a good way of getting multi-band operation from a single length of wire. There are no lossy traps or feedlines, and the antenna is easy to erect. Interstate SSB contacts have been made with this antenna on both eighty and forty metres with powers of between two and twenty watts. Though no detailed measurements have been made, performance on the lower bands seems to be roughly similar to a half-wave dipole at the same height.

References and Further Reading

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2. *The Radio Amateur's Handbook - 1977, ARRL, 1976, page 599.*
3. Cook, R & Fisher, R *Amateur Radio, May 1997, page 20.*
4. Butler, L *Amateur Radio, September 1997, page 15.*



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■ People

A Three Way QSO with Andy Thomas VK5MIR

Ian J Hunt VK5QX
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This may seem an unlikely occurrence. It certainly would be unusual for something like that to occur in connection with an orbiting Space Station. However, I have one major advantage and that is to live in the same city as the father of Andy Thomas VK5MIR/KD5CHF.

This situation has allowed me to talk to Andy as well as his father, hence the three-way-QSO approach. As a result, I have been able to gather information of a nature regarding our own South Australian astronaut which would otherwise probably never come to light. Let me provide you with a somewhat different insight than is usually available concerning such a celebrity as Andy Thomas.

You may already be aware that we were able to obtain a reciprocal licence for Andy through the Australian Communications Authority to allow the use of the callsign VK5MIR as a Special Event station. It certainly has been a special event to have an Australian astronaut circling the globe with his two Russian companions, Talgat Musabayev RO3FT and Nikolai Budarin RV3FB and R4MIR.

Most of you would not be aware of much of Andy's background which eventually led him on the path to space.

Andy came from good Australian stock. His forebears were amongst the first European settlers to arrive in South Australia on the ship HMS Buffalo. One of his great great grandfathers acted as naturalist to the famous early Australian explorer John McDouall Stuart. Andy's father, Adrian Thomas, was born and educated in South Australia.

It is interesting to note that Adrian also managed to get off the ground in a big way when, during the Second World War, he went to England to train as a pilot and became the pilot and captain of one of the famous Lancaster bombers which operated over Europe during those hostilities. From Adrian we learn a little about Andy's background from his (Andy's) younger years.

Andy has always been an individualist and yet always seemed to have the ability to work along with others. In his youth he pursued interests such as hang-gliding, scuba diving, spear fishing, martial arts (Tae Kwan Do) as well as enjoying athletics in general. He loved to make things, amongst which was a spear-gun to help in his underwater fishing. This was a successful project. He did not show out at first as a particularly brilliant student but, from the age of around 10 years began

to improve considerably to the extent that he came to be recognised as a "top" student.

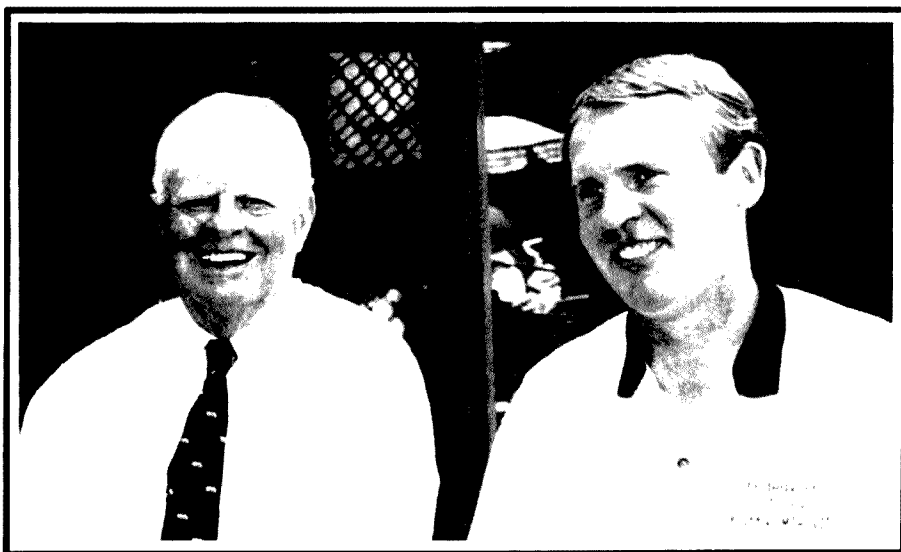
Amongst the items that Andy made were two that no doubt came to have special significance. These were a Mercury style Space Capsule fabricated from a "Clag" (sticky paste) bottle (this item is still in existence), and a model about 38 centimetres high, built from a kit, of a "Redstone" rocket complete with capsule and a one centimetre sized astronaut.

Andy, only sometimes referred to by Adrian as Andrew, attended St Peter's (Anglican) College in Adelaide. Whilst there he was a member of the Cadet Corps and rose to become a Cadet Officer Platoon Commander.

No doubt this form of disciplinary training has stood him in good stead throughout his most eventful life. Whilst at school he took a great interest in science and mathematics.

He attended the Adelaide University and graduated from there with First Class Honours as a Bachelor of Engineering. Subsequently he went on to a Doctorate of Philosophy specialising in mechanical engineering with a major in Aeronautical Science.

Reverting to descriptions of his earlier days, Andy is described by his father as a lad who was an ideal companion in a father-son relationship. They were always good friends and if any matters arose between them they could always talk them through.



Adrian and Andy Thomas.

Adrian Thomas is justifiably proud of his son's achievements. He wears with pride a sports shirt which carries the special embroidered cloth badge emblem produced by the Russians for this special mission of Andy's. It depicts both the MIR Space Station and a Space Shuttle tethered together with a rising sun, symbolic of the dawn of space exploration. The name "Thomas" is shown written in both the English and equivalent Russian lettering with the word "MIR," meaning "Peace," also in both languages. This is certainly a unique badge.

Andy Thomas pursued a career which took him to the United States. There he worked in a variety of positions which seemed to increase in importance and value as far as his career was concerned. There also seemed to be a passion regarding his work which could thus probably be described as being his hobby as well. However, his interests were always towards space exploration generally.

Away from work, Andy enjoys a wide range of music from Beethoven to the Beatles. He has, in fact, taken a "classical" guitar with him on his space mission to MIR. We are not sure whereabouts on the spacecraft he goes to practice. He has also not given any "on air" demonstrations of his playing. At least, not that we are aware of.

So, here we have provided something of the more personal aspects of Andy's background. It would seem, looking in retrospect, that his experiences have flowed along a path which seemed destined for the work he is now doing.

You might note, for example, that becoming a qualified scuba diver in his earlier years served a most useful purpose during his astronaut training when it became necessary to carry out exercises underwater so as to simulate some sense of weightlessness.

His nature shows through his operating on the amateur two metre band. He has a pleasant and very calm manner which comes through as being in complete control over the situation in which he finds himself. Whilst not an experienced amateur radio operator, he deals with the "dogpiles" on frequency with aplomb. Many of us would, no doubt, wilt in these situations.

One thing that has been a delight for me is to be able to hear his descriptions of what is going on, the nature of his living conditions, and his obvious enthusiasm regarding making contact with as many other operators as possible and finding out something about them as people.

It may just be coincidence, but it has seemed to me that Andy Thomas may give some extra attention to stations which call from South Australia as he flies over our country.

Another aspect of real interest are his descriptions of the views that he can take in from his high altitude location. These cover items from the colours of the auroras to seeing rivers, city lights, stars, cloud cover, deserts, etc. As well, you can hear some excitement in his voice as he comments that he has visited a particular place with which he is in radio contact.

. . . there is no doubt that he has made great use of the amateur radio facilities on MIR.

A very moving moment took place as, on one pass, Andy described to me the lights of Adelaide as he passed overhead, naming the various roads he could see and identifying portions of the city which were familiar to him. It seemed to me that he felt very close to home during these moments.

The comment has been made that he is probably the most active of all the astronauts that have flown in space. This may or may not be the case; however, there is no doubt that he has made great use of the amateur radio facilities on MIR.

For myself I have been excited to be part of this adventure. My contacts with VK5MIR have been on a regular basis using both packet and voice transmissions. They have allowed me to assist Andy in making arrangements for him to speak to many other members of our community through voice recordings of messages to particular groups of people. These have ranged from a

recorded video address to families assembled in the Adelaide Festival Theatre for an orchestral event, to a voice transmission to juveniles spread over the Flinders Ranges in the north of the state undergoing correctional training to help rebuild their lives.

In each case Andy has been able to provide a message which has been of value and most certainly of an inspirational nature.

A Message to the Amateur Radio Operators of Australia

Here is the text of a message which Andy Thomas provided to the amateur radio operators of Australia and recorded during a recent pass over Adelaide. This message was played on the VK5 Division Sunday morning news broadcast on 10 May.

"This is Andy Thomas on board the Space Station MIR with a greeting to all the amateur radio operators and enthusiasts in Australia. I want to thank you all for the messages you send and the voice contacts that we've been making.

"I am sorry that sometimes I am not able to get to the radio at times that are very convenient but I am under a fairly heavy work schedule. But I do appreciate receiving your messages. I can't always respond to them, the packet messages particularly, because we get so many, but they are fun to receive none-the-less.

"So I thank you all for providing me with this great source of pleasure while I have been flying up here on MIR. 73 from Andy Thomas on Space Station MIR."

When you read this article, Andy will be within days of returning to earth. This part of his space adventure will be finished but there will be much more ahead.

I believe that amateur radio, particularly in this country, has benefited greatly by an event the like of which has not been seen before. The social value of the hobby has been given a great boost, mainly due to Andy's efforts, but also helped by the manner in which so many radio amateurs have taken him to heart and played their part as well in spreading the gospel of our marvellous hobby. I hope we can build on these benefits in the future.

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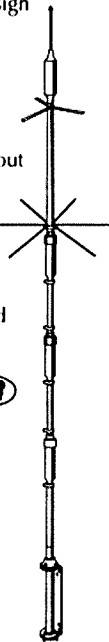


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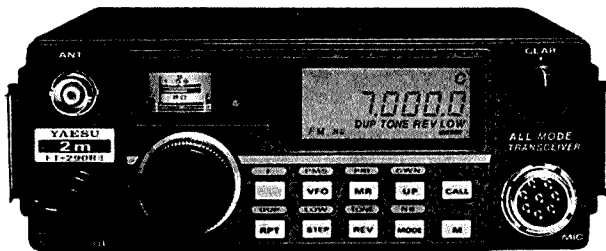
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members extend sympathy to OM Bob ZL1BBZ and family.

MIR Contact

Meg VK5AOV.

One of my most exciting amateur radio events occurred one Sunday morning in March when I made a contact with the orbiting space station MIR.

Over the previous couple of weeks I had been using a satellite tracking computer program to follow the progress of MIR and listening for transmissions from Dr Andrew Thomas VK5MIR, the first Australian in space.

In the context of the space station working by a day based on Moscow time, it was most likely that a packet contact would be made during our daylight hours when the astronauts were asleep. Even so, when I heard the packet transmissions on 145.985 MHz that morning and decided I would have another go, I was very surprised when my computer announced that I was connected to R0MIR-1, and the callsign appeared in colour on the bottom of my screen.

The list of commands: B, J, K, L, R, S, or Help>... available was there, and the information that there were 17 messages which could be read and their numbers. But, alas, MIR had disappeared over the horizon by then, and I was unable to continue the contact. In fact, I must have made contact off the back of the beam when MIR was low in the sky and with only 2.75 watts; quite amazing when I think of the trouble I have at times in digipeating through VK5RAD-3 to VK5WI in Adelaide.

Now I shall have to try for that elusive phone contact. I have heard VK5MIR, but wonder whether I shall be able to speak to an astronaut?

Message from Argentina

Patricia, a YL Geography teacher in Quilmes City, Province of Buenos Aires, Argentina is looking for contacts from all over the world. Her Packet address is LW4EJM@LU1EA. 1876.BA.ARG.SA.

Tower of Strength

Christine VK5CTY and OM Geoff surprised people at a Blanchetown clearing sale when they bought a windmill tower, stating that it would not be used for pumping water, but for erecting antennas so that they could talk to other radio buffs in distant countries. The locals were so intrigued that the story appeared in a rural newspaper with photograph - a nice bit of PR for amateur radio.

Christine and Geoff plan to make maximum usage of their 30 hectares at Swan Reach by erecting several Vee beams, three

or four wavelengths to a side, held aloft by a series of towers. Christine wants to avoid guy lines as they may be a problem for kangaroos, but my experience is that the OM with tractor and slasher is a much greater hazard!

Svalbard (August)

As the date for the International YL meet in this northern outpost draws nearer, you may wish to know more; and you can by accessing <http://home.sn.no/hometbjerke/svalbard/> Gwen is representing ALARA, and we look forward to hearing all about it later this year.

Meanwhile a brief look at the program: sightseeing in Longyearbyen, YL forum, banquet, Russian lunch, boat trip on the Isfjord, sightseeing in Barentsburg, the Midnight Sun, fossil hunt near a glacier, the Plateau Mountain, glacier walking, kayak tour, coal mine tour and scenic flight. Wow!

Next Year in Brisbane

Don't forget our own ALARAMEET next year on 2 and 3 October in Brisbane. Bev has already booked the venue, the RSL Community Hall, Kedron. Put the Ug boots and the chilblain cream in the cupboard, check the elastic in your bikini and plan your holiday around this event!

A Good Scout

Jenny Housden has certainly done her bit spreading the word about amateur radio to young people. Her JOTA station last year had 490 participants! In January her team took handhelds, HF, CW, linked computers and walkie-talkies to the Oakbank Racecourse to involve Guides and their disabled charges at the annual Edna Ayers camp for children with disabilities.

In March Jenny ran the first training in ARDF for the girls at Woodhouse, the Scout camping ground at Piccadilly in the Adelaide Hills. The equipment used was put together by three radio amateurs and consists of receivers built from the kit used by Queensland radio amateurs, modified 828s as transmitters, and home brew antennas.

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AWARDS

John Kelleher VK3DP

Federal Awards Officer
4 Brook Crescent, Box Hill South, VIC 3128
Tel: 03 9889 8393

DXCC

The ARRL Membership Committee announced on 13 March that both the ARRL DXAC and the Awards Committee voted to delete Southern Sudan ST0. Contacts made before 1 January 1995 will count for the deleted country. The current countries are now 328, and the 'deleted' are 58.

The 'deleted country' concept will come to an end when the new DXCC 2000 rules are implemented with effect from 31 March 1998. According to the new rules, no new countries will be added to the deleted list in the future. Deleted 'entities' simply will be removed.

Recent activity from Temotu Island by H40AA is at present being considered for addition as a 'new' country. There is also a rumour circulating that any and all operations from P5 North Korea have been termed 'illegal'.

I have included both of these 'countries' in the list which was published in May *Amateur Radio* in anticipation of any movement by the ARRL DXCC Committees.

QSL Cards

It has come to my notice that out-going QSL cards are being improperly addressed. The general rules for addressing out-going cards state that the addressees call sign MUST appear in the top right-hand corner of the QSL card (front or back). This is a requirement to assist sorting of cards by QSL staff, not only locally but by Amateur organisations worldwide, where the number of cards runs into the thousands. A computer-generated label is just not enough.

Concerns have been raised about the failure by operators to exchange QSL cards, particularly on VHF and UHF bands. This situation was brought to my notice by an avid user of these higher bands, who stated that, even though he personally sent cards out for all contacts, he was being virtually 'blocked' from applying for the **Grid Square Award** because of the lack of cards to verify his contacts.

One of the reasons for this discrepancy has been the ever rising cost of having cards printed professionally. An amateur friend of mine, who dabbles with computers, has been printing his own QSL cards for some time. This way, he only prints what he requires, and it is a veritable short-cut when he operates using a special call sign.

In answer to my question on original costs, he said that this process is cost-effective, and that he was now 'in front' when compared to other methods of printing.

DX Activity

Listening on the bands, I have been surprised, even excited, by the increasing number of DX stations appearing on the HF bands. It would appear that sun spot numbers are rising over the 100 mark, while the A and K indexes, even though a little "fluky", have begun to settle down. With a little persistence I may be able to get those last 25 countries!

The Activity Group of Belarus (AGB)

AGB General Rules. All AGB awards may be obtained by licensed amateurs and SWLs. Your application (or GCR list) should be checked and signed by two other amateurs. The fees for all awards is \$US5.00 or 10 IRCs.

Old Minsk

This award may be applied for by all stations who have made contacts with the City of Minsk, EU1, EW1 and EV1 prefixes. DX stations require two contacts.

Old Belarus

This award may be applied for by all stations who have had contacts with Byelorussian ancient Cities. DX stations require two cities. The list of cities is:

EU1/EW1 - Minsk (CT, FR, LE, MO, OK, PA, PM, SO, and ZA);

EU2/EW2 - Borisov (BI), Volozhin (WO), Dzerzhinsk (DZ), Zaslaval (MI), Kopyl (KL), Kletsk (KC), Molodetchno (MD), Nesvitzh (NE), Slutsk (SL), and Tchervien (ER);

EU3/EW3 - Brest (LN, MK), Berieza (BE), Vysokoe, David-Gorodok and Drogotchin (DR), Ivanovo (IW), Kamenets (KA), Kobrin (KO), Kosovo Liakhovitchi (LH), Pinsk (PI), Pruzhany (PV) and Stolin (ST);

EU4/EW4 - Grodno (LS), Oshmiany (ON), Volkovysk (WW), Lida (LI), Mosty (MW), Novogrudok (NG), Slonim (SJ) and Smorgon' (SN);

EU6/EW6 - Vitebsk (OB, PR, VE), Braslav (BS), Verkhnedvinsk (WD), Disna and Dokshitsky (DO), Orsha (OA), Polotsk (PO) and Tolotchin (TO);

EU7/EW7 - Mogiliev (CN, LM, OR PW), Bobruysk (LB), Bykhov (BY), Klimovitchi (KM), Krichev (KW), Mstislav (MS) and Slavgorod (SA).

EU8/EW8 - Gomel (CE, GO, OS, SK, VD), Zhlobin (VL), Mozyr' (MZ), Petrikov (PE), Rogatchev (RG) and Tchetchersk (EE).
PX-Belarus (Prefixes of Belarus)

This award may be applied for by all stations who prove contacts with Byelorussian stations with different prefixes. Prefixes are defined according to the WPX rules, eg EU1, EU2, EU3; EW1, EW2; EV1, EV2; UC1, 2, 3, 6; UC50; RC2; UK2; RK2. DX stations need five prefixes. Stickers are available for each additional five prefixes.

W-AGB-M (Worked with AGB members)

This award may be applied for by all stations who have had five contacts with AGB members, from the following list:

EU1AN (UC2AN, UC2ABH), EU1AO (UC2ACO, UC2AO), EU1AR (UC2AR), EU1CQ (UC2AFM), EU1EU (EU930EU, UC2ABO, UC2WAO), EU1DX (UC2ADX), EU2AA (UC2CED, RC2CA), EU2AW (UC2AW), EU3FT (UC2LFT, UC2CFT), EU4AA (UC2ICC, UC2IO), EU6AA, EU6EU (UC2WJ), EU7SN (UC2SN, UC2SKC), EW1ABA (UC2ABA), EW1BA (UC2BA), EW1EA (RC2AY), EW1MM (UC2AGL), EW1TZ (UC2AFE), EW3LB (UC2LB), EW6TU (UC2WB, UA9XHT), EW7KR (UC2SCX, UA0LCI), EW8VD, RA3LZ, RU9WB, RV1CC (UT1II, RB4INR), RV9WB, U5QQ, UT4UO, UY5ZZ (RB5QW), UY5YY (UZ100YY).

Mirror Calls

This award may be applied for by all stations who have had five contacts with "Mirror Calls" stations, eg DL4LD, US4SU, UX4XU, DL2LD, LY2YL, DF4FD, etc. Stickers for each additional five.

Double Calls

Requires five contacts with "Double Calls" stations, eg EW1EW, EU4EU, UR5UR, UX0UX, LY2LY, etc. Stickers for each added five.

Twin Calls

This award may be applied for by all stations who have had contacts with "Twin Calls" stations, eg UC2WAO, UA1ZAO; EU1AO, DL1IAO, RW6AO; EU1EU, DK2EU, SM5BEU, EU3EU, etc. Stickers are available for each additional five matching suffixes.

Further information on any of the above colour-printed awards may be obtained from the AGB Manager, Igor "Harry" Getmann EU1EU, PO Box 143, Minsk-5 220005, Belarus (e-mail: getmann@axis.belpak.minsk.by) Do not post any mail enclosing IRCs or greenstamps to this address!

All applications for the above awards should be sent (for safety purposes) to the address of the Awards Manager, Valdas Slezas LY1BA, PO Box 67, Vilnius 2000, Lithuania.

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Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaco Street, Mentone VIC 3194
E-mail: vk3did@hotmail.com

My sincere thanks to Peter VK3APN for his work over the last six years and his good, simple presentation. Well done, Peter. We shall miss you. I shall try to maintain that format, especially as we are entering the annual "busy period" of VK contesting. I look forward to helping all contesters, so please feel free to contact me as I settle in to this task.
73, Ian Godsil VK3DID

Canada Day Contest (CW and Phone)

0000-2359z Wednesday, 1 July

This contest, which runs on 1 July each year to celebrate Canada's confederation, will take place this year on a Wednesday.

Bands are 160 to 2 m, CW and phone. Suggested frequencies are: (CW) 25 kHz up from band edge, and (SSB) 1850, 3775, 7075, 7225, 14175, 21250 and 28500 kHz. Check for CW activity on the half-hour. Note there are to be no CW QSOs in the phone sub-bands and vice-versa.

Any station can work any other once per band and mode. Exchange RS(T) and serial number; Canadians will send RS(T) and province/territory. Score 10 points for Canadian QSOs, including VE0, and two points for others. Canadians with RAC suffixes are worth 20 points. Multiplier is Canadian provinces and territories (max 12), counted once per band and mode: VE1/CY9/CY09NS); VE2/VA2 (QC, QU or PQ); VE3/VA3 (ON); VE4 (MB); VE5 (SK); VE6 (AB); VE7 (BC); VE8 (NWT); VE9 (NB); VO1/VO2 (NF); Yukon (YU or YT); and VY2 (PEI). Final score equals points x multiplier. Send your log and summary sheet by 31 July to: RAC, 720 Belfast Road #217, Ottawa ON K1G 0Z5, Canada.

Jack Files Memorial Contest

4 July (CW), 11 July (SSB): 0800-1400z Saturday.

This contest honours the late Jack Files, a long-serving VK4 WIA Councillor. The object is for amateurs throughout VK/P2/ZL to work as many VK4 Towns and Shires as

Contest Calendar June - August 1998

Jun 1	Portugal Day Contest (SSB)	
Jun 6/7	IARU Region 1 Field Day (CW)	
Jun 13	QRP Day Contest (CW)	(May 98)
Jun 13	Asia-Pacific SSB Sprint	(Jan 98)
Jun 13/14	ANARTS RTTY Contest	(May 98)
Jun 13/14	South America WW Contest	
Jun 20/21	VK Novice Contest	(May 98)
Jun 20/21	All Asia CW DX Contest	(May 98)
Jun 20/21	ARRL Field Day	
Jul 1	Canada Day Contest (CW/Phone)	
Jul 4	Jack Files Memorial Contest (CW)	
Jul 4	NZART Memorial Contest (CW)	
Jul 4	Australasian Sprint (CW)	
Jul 11	Jack Files Memorial Contest (Phone)	
Jul 11	Australasian Sprint (Phone)	
Jul 11/12	IARU HF Championship	
Jul 18	Pacific 160 Metres Contest (Phone/CW)	
Jul 18	Colombian DX Contest (Phone/CW)	
Jul 24	Zip 80 Metres Contest (Phone)	
Jul 25	Waitakere 80 Metres Sprint (Phone)	
Jul 25/26	RSGB IOTA Contest	
Jul 31	Zip 80 Metres Contest (CW)	
Aug 1	Waitakere 80 Metres Sprint (CW)	
Aug 1/2	YO DX Contest	
Aug 8/9	Worked All Europe (CW)	
Aug 15/16	Remembrance Day Contest	
Aug 15/16	Keyman's Club of Japan (CW)	

possible, to encourage portable/mobile activity from the less populated VK4 towns and shires, and to serve as a warm-up for the Remembrance Day contest.

Sections are: (a) Single Operator Home; (b) Club Fixed; (c) Single Operator Mobile/Portable; (d) Club Mobile/Portable; (e) Stations outside VK; (f) SWL. Operate on 160, 80 and 40 m. Cross-band contacts are not allowed.

Exchange RS(T) followed by serial number starting at 001 and incrementing by one for each QSO, continuing when changing bands. Multi-transmitter stations should use separate serial numbers starting at 001 for each band. VK4 entrants will send their two-letter Shire code after their serial number.

Score one point per QSO with non-VK6 and two points per QSO with VK6. Each VK4 Shire/Code per band counts as a multiplier, also each prefix per band. To stimulate portable/mobile activity, portable/mobile stations can also claim one multiplier per band for each VK4 Shire/Town from which they operate. The final score equals total points times total multiplier.

In this contest only, single operators are allowed to have a log keeper. Club stations can use multiple transmitters, providing there

is only one station on each band at any one time. These transmitters need not be co-located and may even be in different Shires. Note: Stations can be re-contacted on the same band after one hour. Contacts with entrants in other contests are valid, as are DX contacts and those with VK6 stations are encouraged.

Attach a summary sheet showing the name, address and callsign of the entrant, section entered, points claimed and a declaration that the rules and spirit of the contest were observed. Send logs to: Jack Files Contest, GPO Box 638, Brisbane QLD 4001 to be received by Tuesday, 1 September 1998. Trophies will be awarded to the highest scorer in each section and the highest Novice overall, providing that there are at least five entrants in that section. Certificates will also go to the three highest scorers in each section.

VK4 City/Town/Shire codes are: AL Albert; AC Aramac; AN Arakun (R); AT Atherton; BL Balonne; BA Banana; BC Barcardine; BO Barcoo; BH Bauhinia; BT Beaudesert; BY Belyando; BD Bendemere; BG Biggenden; BX Blackall; BV Boonah; BQ Booringa; BZ Boullia; BW Bowen; BN Brisbane; BS Broadsound; BP Bulloo; BU Bundaberg; BI Bungil; BK Burdekin; BR

Burke; BE Burnett; CB Caboolture; CS Cairns; CL Calliope; CA Caloundra; CM Cambooya; CD Cardwell; CP Carpentaria; CT Charters Towers; CH Chinchilla; CF Clifton; CY Cloncurry; CK Cook; CN Crows Nest; CR Croydon; DY Dalby; DL Dalrymple; DI Diamantina; DG Douglas; DU Duaringa; EA Eacham; ED Eidsvold; EM Emerald; EK Esk; ET Etheridge; FZ Fitzroy; FL Flinders; GT Gatton; GH Gayndah; GD Gladstone; GC Gold Coast; GI Goondiwindi; HT Herberton; HB Hervey Bay; HK Hinchinbrook; JE Jericho; JO Johnstone; JY Jondaryan; KY Kilcoy; KK Kilkivan; KG Kingaroy; KO Kolan; LA Laidley; LV Livingstone; LC Logan; LO Longreach; MC Mackay; MA Mareeba; MO Maroochy; MB Maryborough; MK McKinlay; ML Milmerran; MN Mirani; MV Miriam Vale; MT Monto; MZ Mornington (R); MI Mtlsa; MM Mt Morgan; MU Mundubbera; MY Murgon; MX Murilla; MH Murweh; NN Nanango; NE Nebo; NO Noosa; PO Paroo; PD Peak Downs; PY Perry; PR Pine Rivers; PT Pittsworth; QL Quilpie; RC Redcliffe; RD Redland; RI Richmond; RH Rockhampton; RM Roma; RO Rosalie; SA Sarina; ST Stanthorpe; TB Tambo; TA Tara; TM Taroom; TH Thuringowa; TI Tiaro; TO Toowoomba; TE Torres; TV Townsville; WG Waggamba; WO Wambo; WR Warroo; WA Warwick; WH Whitsunday; WI Winton; WD Wondai; and WC Woocoo.

(R) = restricted area for radio transmission (Shire entry permit required).

Australasian Sprints (CW and Phone)

4 July (CW), 11 July (Phone), 1100-1159z

The Adelaide Hills Amateur Radio Club is pleased to announce the thirteenth annual Australasian Sprints to be held on 4 July (CW) and 11 July 1998 (Phone), between 1100-1159z.

Both these contests, on 80 metres, are open to all appropriately licensed amateurs in VK, ZL and P2 call areas using a single call sign. Contacts with any VK, ZL or P2 station during the contest may be counted, but a station may be claimed only once. A section is provided for SWLs. Certificates will be awarded to the highest scorers in each call area, overall winners, the highest scoring Novice operator in the CW contest only provided that this entrant is not entitled to another award for the CW Sprint, and to the highest scoring SWL log in each call area.

Frequencies: CW 3.500 - 3.700 MHz; Phone 3.535 - 3.700 MHz. Call CQ Sprint/CQ Test/CQ Contest. Exchange serial number starting between 001 and 999, reverting to 001 when 999 is reached. RS(T) is optional but may be required for any other concurrent contest. Logs must show time (UTC), callsign

of station worked (both stations for SWLs), and serial numbers given and received. Send cover sheet showing name and date of Sprint, callsign, name and address of operator, total number of contacts claimed and a statement that the operator has abided by the rules and spirit of the contest. Multi-operator club callsigns must list the callsigns and names of all operators.

Any special conditions (mobile, QRP, etc) should be mentioned in the statement, along with any comments. Send to: AHARS Contest Manager, PO Box 401, Blackwood SA 5051. Logs may be sent by packet to: VK5AFO@VK5WI.#ADL.#SA.AUS.OC or by e-mail to: cavidj@picknowl.com.au by Friday, 14 August 1998.

IARU HF Championship (CW and Phone)

1200z Sat to 1200z Sun, 11-12 July

This popular contest runs on the second weekend of July each year. Bands are 160 - 10 m. Categories are single operator: CW only, phone only, mixed; multi-operator: single transmitter mixed mode only. Multi-operator stations must remain on a band for at least 10 minutes at a time (exception: IARU member society HQ stations may operate simultaneously on more than one band with one transmitter on each band/mode, providing only one HQ callsign per band is used).

Exchange RS(T) and ITU zone (P2 = 51, VK4/8 = 55, VK6 = 58 and VK1/2/3/5/7 = 59). HQ stations will send RS(T) and official society abbreviation.

Claim one point for QSOs within own zone or with a HQ station, three points for QSOs with a different zone in own continent, five points for QSOs with different continents. Multiplier is total ITU zones plus IARU HQ stations worked on each band. Final score is total QSO points from all bands x sum of multipliers from each band.

Include a dupe sheet for 500+ QSOs. Send logs postmarked by 8 August to: IARU HQ, Box 310905, Newington, CT 06131-0905, USA. Official forms and an ITU zone/prefix/continent map can be obtained from the same address on receipt of a large SASE with two IRCs or equivalent. Certificates to the top scorers in each category, in each state, ITU zone and DXCC country. Also, stations with 250+ QSOs or 50+ multipliers will receive achievement awards.

NZART 80 m Memorial Contest (Phone/CW)

0800-1400z Saturday, 4 July

VKs are invited to join ZLs in this annual contest to commemorate amateurs lost in World War II. It is open to single operator stations on 80 m, fixed and mobile. The

contest has six operating periods, each of one hour, from 0800-1400z.

A station may be contacted TWICE during each operating period (once on phone and once on CW), providing that such contacts are not consecutive. Exchange RS(T) plus serial number commencing at any number between 001 and 300 for the first contact.

On phone score 15 points for the first QSO with a scoring area, 14 points for the second QSO with that area, descending to one point for the 15th and subsequent QSOs with that area.

The same scoring system is used with CW, except that QSO points remain at five for the 11th and subsequent QSO with that scoring area. Scoring areas are ZL and VK prefix areas and DXCC countries. The rules for SWL entrants are similar, except that the callsigns of the stations heard and being worked must be given and only the cipher of the station heard is required.

Send logs and summary sheets ASAP to: Memorial Contest, PO Box 20332, Auckland 7, NZ. Nominate the category entered (Open; Phone; CW; Beginner's CW; QRP; Home-made SSB) and include a points summary showing the number of QSOs and points for each VK/ZL call area worked. Certificates will be awarded to the top three scoring VKs.

Pacific 160 m Contest (CW/Phone)

0700-2330z Saturday, 18 July

This contest, slightly enlarged this year to include all Pacific Islands, is scheduled for the third Saturday of July each year. The objective is for P2, ZL and VK stations to work as many local and overseas stations as possible on 160 m. DX stations are encouraged to participate, but may only work P2, ZL and VK.

Sections are CW, Phone and SWL (all single operator). Exchange RS(T) plus serial number. Stations should claim one point per QSO with their own call area, two points for other call areas in VK or ZL, three points for Pacific Islands (ZK1, VK9, P2) and five points for far DX countries. For VK and ZL entrants, if the number in your callsign differs from your actual location, please follow your callsign with the appropriate number to indicate your location.

The multiplier is the number of ZL and VK call areas worked, plus the number of OTHER DXCC countries worked. Final score equals total QSO points times multiplier.

Certificates will be awarded to the top-scoring stations in each section, in each call area of ZL and VK, and in each DXCC country.

Send your log, signed summary sheet and any comments to: Ian Godsil VK3DID, 25

Monaco Street, Mentone VIC 3194, Australia, to be received by 17 August 1998.

Logs on 3.5 inch disc in ASCII, or via e-mail, gladly accepted.

Colombian Independence Day Contest (CW/Phone)

0000-2400z Saturday, 18 July

This is a world-wide contest, all bands 80-10 m. Categories are Phone and CW (not mixed); single operator (single all band), and multi-operator (single and multi-transmitter). Exchange RS(T) plus serial number. Score five points per HK QSO, three points per QSO with stations in another country, one point per QSO with stations in same country, and 10 points for QSOs with official HK HQ stations.

The multiplier is the total countries, including HK, plus HK call areas worked on each band. "HK" includes all Colombian prefixes. Final score is total QSO points from all bands by sum of multipliers from all bands. At least 2% of QSOs must be with HK and 10% with stations outside your own country. Send logs postmarked by 28 August to: Colombian Independence Day Contest, Apartado 584, Santafe de Bogota, Colombia.

Waitakere 80 m Sprint

Phone: 1000-1100z Saturday, 25 July

CW: 1000-1100z Saturday, 1 August

This 80m sprint contest is open to all ZL and VK amateurs.

In fairness to other amateurs, it is requested that no linear amplifiers be used in this contest. Call "CQ Sprint" and exchange serial numbers commencing at 001 and incrementing by one for each contact. RS(T) is not required.

Logs must show stations worked, with serial numbers sent and received. Attach a summary sheet and send log to: Sprint Contest Manager ZL1BVK, 14 Takapu Street, Henderson, Auckland 1208, NZ to arrive by 1 September. Alternatively, logs may be sent via packet, using three columns only with no commas or other delimiters, to: ZL1BVK@ZL1AB. Certificates will be awarded to the overall winner, the best score in each ZL call area and the three best VK scores.

'Zip' 80 m Contest (Phone/CW)

Phone: 0900-1000z Friday 24 July

CW: 0900-1000z Friday 31 July

This is a new contest for low power enthusiasts from ACORNZ, and all VK amateurs are invited to join in, irrespective of power levels.

Call "CQ Zip" and use centre frequencies of 3,680 kHz (Phone) or 3,530 kHz (CW). Exchange RS(T) plus serial number. Score one point for QRP to QRO ZL; five points

for QRP to QRO DX; five points for QRP to QRP ZL and 15 points for QRP to QRP DX. The reverse applies to DX stations. "DX" is any station outside ZL. No multipliers. Honour system applies. Sign / QRP if using up to five watts CW or 10 watts Phone.

Send logs showing mode, date, time, station worked, RS(T), points claimed per contact and total points to: Bill Cox ZL2BIL, 5A Konini Grove, Raumatangi Beach 6450, NZ, by 14 August 1998.

RSGB Islands On The Air Contest (CW/Phone)

1200z Sat - 1200z Sun, 25-26 July

This contest is intended to promote contacts between qualifying IOTA island groups and the rest of the world and to encourage expeditions to IOTA islands. Sections are: IOTA Island Stations (ie those with an IOTA reference); and World and SWL. You can enter as CW only, SSB only, or mixed mode. Single operator stations can enter as unlimited (no time limit), or limited (12 hours max, with off periods at least 60 minutes long and marked in the log).

Use 80 - 10 m, avoiding 3.56 - 3.60, 3.65 - 3.70, 14.06 - 14.125 and 14.30 - 14.35 MHz. Exchange RS(T) plus serial number, plus IOTA reference number if applicable. Stations can be contacted on both phone and CW on each band. Use the same serial numbering system for both modes.

Score 15 points per QSO with an IOTA station (including UK), five points for stations in another DXCC country, and two points per QSO with one's own country or IOTA reference. The multiplier equals the total IOTA references per mode per band, added together. The final score equals the total QSO points x the total multiplier.

For each band (but not each mode), submit a separate log, multiplier list and dupe sheet. Send your log and summary sheet to: RSGB IOTA Contest, PO Box 9, Potters Bar, Herts EN6 3RH, UK postmarked no later than 28 August. A comprehensive range of awards is offered to the leading stations in each category, section and continent.

Results of the VHF/UHF Field Day 1998

from John VK3KWA

This year there were 31 logs from 29 entrants. VK7 missed out, VK6 had only one log and VK2 could only manage three logs. Four logs had to be re-scored. Please check your sums and don't forget to claim the grid square you are operating from.

The scores give some useful pointers for those wishing for bigger scores; either add extra bands, or go "roving" (good if you only have equipment for a couple of bands).

I kept a close ear on 50 MHz and did not hear or have reported to me any contest exchanges below 50.150 MHz. Thanks to all participants for their considerate operating habits.

Congratulations to all entrants, especially those who went into the field. Special congratulation to Wal Howse VK6KZ for setting a national 24 GHz record of 142.7 km during the Field Day.

From time to time I make special awards to those who brave the elements and this year's endurance award goes to Norm McMillan VK2XCI, who had to cut short his operation in the face of lightning strikes - perhaps because he was perched on top of a disused copper mine?

Basic results are listed below, as space does not permit a full listing of all bands.

Section A - Portable, Single Operator, 24 Hours

Call	Grids	Total
VK3WRE	37	3277
VK4OE	28	2549
VK2TWR	20	1591
VK6KZ	12	1548
VK4IS	4	699
VK5XY	22	690
VK3DQW	14	560

Check Log

Section B - Portable, Single Operator, 6 Hours

VK2SH	18	1547
VK3TBM	18	1480
VK3AFW	21	1183
VK6KZ	9	1063
VK3TBM	10	863
VK3TKO	13	770
VK5AJS	10	603
VK2ANK	5	423
VK1PK	3	224

Section C: Portable, Multi-Operator, 24 Hours

VI5OG	51	3814
VK4IF	44	3533
VK1ACA	43	3116
VK5ARC	28	2058
VK5AR	30	1923
VK3ER	34	1917

Section D: Home Station, 24 Hours

VK3KLO	31	2789
VK3TMP	32	2784
VK3BDL	26	1929
VK3CY	21	1710
VK1WJ	12	528
VK5NY	14	524
VK4PJ	4	447
VK3JK	8	334

Thanks to VK3APN, VK5OV, VK3KWA, ZL2BIL, NZART and RSGB for information.

ar

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Pile-up Behaviour

Not so long ago I received a letter from an active DXer who asked me to keep his identity confidential. The letter was disturbing because it reflected on the questionable behaviour of some DXers who, according to the writer of the letter, were behaving in an unethical manner.

The writer referred to a very short activity from one of the rare islands in the Pacific where, due to a variety of circumstances, bedlam had taken over the calling sequences of the DX operator. I quote from the letter: *"The frustration showed with the usual results, and unfortunately some VKs were in there with the worst. They called out of turn and over the top of him. I switched off in disgust. Anyone who is so obsessed with working that almighty 'new one', that they have to engage in unethical practices should get out of the shack and get a life. All in all, it was a sorry display, the extent of which I haven't heard for quite a while"*.

Harsh words indeed. I think we all should examine our own conscience as to whether or not our own behaviour on the bands reflects the comments of the letter writer? A good example of better DX pile-up behaviour is that of the Japanese operators; please listen to their pile-ups. As soon as the DX station returns the call of one of them, there is instant and total silence. The short exchange and acknowledgement of the reports continues without any interference. This takes about five seconds. The behaviour of the rest of the amateur world is generally not as good. The worst offenders are the southern Europeans.

So, let's make a 'new year' resolution, even though we are already in the middle of the year. We have to train and try to be better operators by listening more, acting with 'slow haste' and with more consideration for the needs of others!

DX Expedition to Rowley Shoals - VK9

Malcolm, the well known Australian 'island activist' announced, on 1 May at the IOTA

1998 Convention held on the Canary Islands, the proposed 'ultimate' island hopping - a DXpedition to Imperieuse Reef, part of the Rowley Shoals.

Malcolm VK6LC was the invited guest speaker at the Convention. According to the plans, the DXpedition will take place during next year in the months of June-September 1999. The shoals are located in the Indian Ocean at a distance of 180 nautical miles (333 km) due west of Broome in the tropical far north of Western Australia (17° 35' S, 118° 55' E).

The Rowley shoals consist of three atolls. The most northern is Mermaid Reef; in the middle of the group is Clerke Reef; and further south is Imperieuse Reef. The only automatic light and weather station is situated here for the group. The reef is 18 km long and approximately 10 km wide with a small island, Cunningham Island (800 m long and 250 m wide), above the high water mark.

The proposed charter motor sailing yacht was built in 1983. It has a 24 metre aluminium hull, a 5.2 knot cruising speed with sails, and a "friendly" charter price of \$2000 per day. Government landing permission, transmitting authorisation and a DXpedition special call have all been obtained and approved.

New DXCC Entities?

I trust by now every DXer understands that the revamped DXCC rules replace the former "country" description with the word "entity". From now on we will talk about new DX entities and not new DX countries.

The revamping of the new rules revised the former rule of "separation by water 225 miles distance" to the more manageable 350 km, a reduction of 66 km in the required distance. This new rule opened up a number of possibilities for the creation of new DXCC entities for the DXCC award.

Three months ago we took part in the scramble to work a possible new target, the Temotu Islands H40.

Two months ago two more new candidates emerged for the much sought after "new entity". The Marquesas Group is composed of nine islands and is about 1500 km north-north west of Tahiti (9° 0' S, 139° 5' W). Total population is 6,548 with a land area of 661 square kilometres. Kan JA1BK operated from this group as FO0MIZ from 10-12 April, ending up with 2,801 QSOs on 80 to 12 metres CW and SSB. His QSL manager is G Hamilton VE3HO, PO Box 1156, Fonthill, ONL0S 1E0, Canada.

Immediately afterwards came an American father and son team, Bob Sr W6RS and his son Bob Jr W6KR who set up shop to satisfy the DX community's interest in a contact with the Marquesas Group. They were active from 21 to 28 April using the callsign

FO0FR. QSL for this activity goes to Richard G Whistler K6SLO, 716 Hill Ave, San Francisco, CA 94080-4242, USA.

The other possible new entity is the Austral Islands. These are located about 1,250 km south of Papeete (22° 5' S, 152° 0' W). Rurutu Island has a population of 6,280 and covers 141 square kilometres of territory.

Kan JA1BK moved to this island with his FO0MIZ callsign on 14 April and was active until 17 April. A total of 3,523 QSOs was made on 80-10 metres CW and SSB. Again, QSLs for this second operation go to VE3HO as above.

A change of operators followed. JA1BK went home to Japan and the two American amateurs moved in and operated from 13 to 20 April. They used the call FO0FI and made 22,200 QSOs. QSLs go to K6SLO (who is none other than the former WA6SLO) and his address is above.

In the meantime, Paul F6EXV had filed a petition for both the Marquesas and Austral Islands to become two new entities for DXCC. The ARRL Membership Committee at its meeting in Dallas, Texas on 28 March asked the DXAC (The DX Advisory Committee) to add the Marquesas, Austral and Santa Cruz Islands to their agenda for discussion and recommendation.

Further research has revealed that four Polynesian amateurs, F05DS, F05LZ, F05MK and F05QG are living on the Marquesas Group. Most of these amateurs are only French speaking and congregate around 14118-14120 kHz, the calling frequency of the French in Oceania. However, Jose F05QG was heard lately (he speaks very little English), assisted by XE1L as co-ordinator, on 14190 kHz between 0200 and 0600 UTC. QSL via XE1L.

Chatham Island - ZL7IR

Ed K8VIR is not a stranger to these columns. Ed is an American scientist studying the fauna of New Zealand. He travelled widely there and was active from the South Island on many occasions. Lately he was active from Stewart Island as ZL4IR whilst counting the brown Kiwi birds.

Between 19 and 26 March Ed was on Chatham Island. Here are some details from his letter to me: *"On March 19, 1998 I arrived at the home of one of the world's rarest birds, the Chatham Island Black Robin."*

"The Chatham Islands comprise a group of two large, and a dozen smaller, islands at 44° South and 178° West, placing them about 525 nautical miles (972 km) east of Christchurch, New Zealand. The climate is moderate with temperatures varying a little from an average of 55° F (13° C). The group is of volcanic origin. The main island of 90,000 hectares, Chatham Island, is

somewhat low lying in the north resulting in the formation of large areas of peat-land. There are a few hills and small volcanic peaks in the north-west. The predominant geographical feature of the island is the Whanga Lagoon, a large central brackish water lagoon of 16,000 hectares covering 20% of the island area. The islanders say that every corner of the Chathams is different. Pitt Island, one of the Chatham Islands, will be the first land to see the light of the new millennium, a fact that has the rest of the world highly excited.

"The radio conditions on the first day were good and I made a number of contacts with a system of phased wire arrays. Noise levels on 20 metres were quite high. Fifteen was quieter but the long distance propagation was only marginal.

Eighty and forty metres were up to expectations. I was surprised by the magnitude of the pile-up on 20 metres. There has been a number of ZL7 DXpeditions in the last year, and I expected much less activity. The twenty metre band was usually open all night to some area of the world."

Ed is now on his way back home to the USA. QSL direct to him, Ed Hartz K8VIR, PO Box 480, Green Valley, AZ 85622, USA.

Bouvet Island 3Y0

In a press release from the South Sandwich Island DX Group (SSIDXG), Tony De Prado WA4JQS announced that the planned activity

on Bouvet Island has been delayed again. Problems developed when the Norwegian Government, through the Nordst Polar Institute, notified the DX group of plans for a major environmental project on Bouvet Island. Because of the environmental concerns and planned activities, the SSIDXG decided to postpone the DXpedition to a future date.

St Paul Island CY9AA

Mike VE9AA advises that he received official permission to be active from St Paul Island between 25 June and 15 July, although the total time of operation will likely be only nine or ten days.

The callsign will be CY9AA as on the previous occasion in 1997.

Anticipated activity will be from 160 to 6 m, on SSB and CW on the usual DX frequencies; but the 6 m band will receive priority. Mike is a college student with limited resources and he is looking for operators, donations and sponsors. He can be reached at either ve9aa@hotmail.com or ve9aa@nbnnet.nh.ca

Future DX Activity

* Senegal. Didier F5OGL is now active from Senegal with the call sign 6WIRE. QSL via: DAT, PO Box 3024, Dakar, Senegal, Africa.

* Beijing. A group of Chinese amateurs will be active as BI3H from Shijituo Island

on 25-26 July during the IOTA Contest. QSL via W3HC (ex-W3HCW).

* Madagascar. Ake SM7CIP has been active since February as SR8FU. He is likely to stay there for a long time. QSL via SM0DJZ, Jan Hallenberg, Siriusgatan 106, SE-195, 55 Mersta, Sweden or via the Swedish QSL Bureau.

* Lichtenstein - HB0. Eight members of the Eindhoven Student Radio Amateur Club will activate HB0/PI4TUE from a mountain restaurant in Lichtenstein, 2,010 metres above sea level. All modes on all bands.

* Iceland - TS. Sigi DL7DF, Tom DL7BO, Ben DL7BY, Frank DL7UFR, and two YLs will be active from 15 to 21 June on low bands CW, but SSB and RTTY is also possible. QSL via DL7DF.

* Cambodia - XUF2. Harv XUF2 (this is a valid callsign) has been reported operating RTTY and SSB.

* Togo - 5V. Marc F5CPU is active with the callsign 5V7BM. His activity will last until the end of 1999. No other details were given.

* Navassa - KP1. Dan K8RP announced a DXpedition to Navassa Island and in the near future. Specific dates will be advised at the Dayton Hamvention. A special event type of callsign N1V will be used by the group.

* South Shetland Islands. Stan SP3BGD is now active as HF0POL from Henry Arctowski Station on King George Island. QSL via SP3SUN.

* Pitcairn Island. Expect to hear the new VP6 prefix from Pitcairn Island beginning 1 May. Terry VP6TY was heard operating the club station VP6PAC on 2 May on 40 m SSB. QSL to PO Box 73, Pitcairn Island via New Zealand.

* Tromelin Island. Henry FR5ZQ was heard again as FR5ZQ/T. The length of his stay is unknown. QSL via his home call and address: Henri Namtameco, Rampe De Saint Francois, 5052 Tour La Chaumiere, F-97400, Saint Denis, Reunion, France.

* Ascension Island. There is now a new activity from the refurbished club premises of the island's ARC. Paul ZD8T and ZD8V were heard lately working from the islands.

* Tanzania. Paul 5H3PW will be active from this east African country for at least four years. He was heard on skeds between 1900 -2000 UTC on Saturdays and Sundays on 21245 kHz and will QSO other stations after. QSL via N2CD.

* Algeria. Mark ON4WW (ex-9X4WW) has arrived in Algeria for a six month stay. He hopes to be on the air as 7X0WW, CW on all bands. QSL via ON5NT.

* Iran. Ali EP2MKO was heard on 20 metres (14,011 kHz) between 2000-2100 UTC and on 15 metres (21,004 kHz) after 2130 UTC. QSL via UA6HCW.



Ed Hartz ZL7IR operating from a hill above Waitangi. Petrie Bay is in the distance.

Interesting QSOs and QSL Information

* **5B4LP** - Andre - 28550 - SSB - 0734 - April. QSL via F6FNU Antoine Baldeck, PO Box 14, F-19291, Arpajon Cedex, France.

* **5B4ADA** - Ivo - 28550 - SSB - 0735 - April. QSL via Ivo Bezer, PO Box 1642, Nicosia, Cyprus.

* **ZS6AAB** - Brian - 28448 - SSB - 0744 - April. QSL via Brian Edwards, PO Box 11106, Selcourt 1567, South Africa.

* **C6AFV** - Delano - 21295 - SSB - 0125 - April. QSL via Delano Taylor, Box F-3563, Freeport, Bahamas.

* **KP4DKE** - Peter - 21291 - SSB - 0201 - April. QSL via Pedro S Labayen, 10 Esteves Ave, Ultuado, Puerto Rico.

* **TF3DX** - Villi - 14 MHz - CW - 1955 - Mar. QSL via Vilhjalmur Thor Kjartansson, Silungakvisil 10, IS-110, Reykjavik, Iceland.

* **5H1/G0IXC** - Jim - 14 MHz - SSB - 1455 - Mar. QSL via G0IXC, JH Martin, 27 Firs Crescent, Harrogate, North Yorks, HG2 9HF, UK.

* **SV9ANH** - Vagelis - 14240 - SSB - 0622 - Mar. QSL via the Bureau.

* **ZD7WRG** - Jonny - 14210 - SSB - 0746 - Mar. QSL via WA2JUN, Anthony L D'Epcole, 187 Long Hill Road, Oakland, NJ-07436, USA.

* **UA1JJ/ANT** - Slaval - 14011 - CW - 1120 - Apr. QSL via Box 496, St Petersburg, 196244, Russia.

* **5R8FK** - Ray - 7018 - CW - 2120 - Apr. QSL via NY3N, Raymond B Shankweiler Sr, RFD 2, Box 364-AA, Seaford, DE-19973, USA.

* **FG5FC** - John - 14226 - SSB - 1311 - Apr. QSL via F6DZU, Hubert Loubere, 289 Ave de Caupos, Biscarosse, France.

From Here and There and Everywhere

* Jack **VK2GJH**, who was active in the Pacific as **T30JH**, **C21JH** and **V63JH**, etc, has lately been getting many QSL cards, mostly from overseas, for the Nauruan station **C21NI**. Jack is not the QSL manager for this station. **C21NI** used to be the callsign of the Nauruan Amateur Radio Club which is now defunct. Jack operated from **C21NI** until about November 1991. He is happy to QSL the contacts made before that date, and also the QSOs made with his personal callsign **C21JH** since that date. However, he is unable to QSL **C21NI** contacts after November 1991. He will return the cards if reply postage is included. Jack is not a member of the Bureau and all QSLs should be sent direct to Jack D Haden, PO Box 299, Ryde, NSW 2112, Australia.

* The new DXCC (DX Century Club) branch manager is Bill Moore **NC1L**, effective from 20 April 1998.

* Sweden. The special call **7S5BE** will be active on the CW and SSB section of the bands until the end of the year. QSL via the Bureau.

* There were 48 International Marconi Day stations active on 25 April celebrating the birthday of Guglielmo Marconi.

* Mongolia. The Italian DXpedition started on 7 April using the call **JT1Y**. Due to technical and other problems the three station activity had to be reduced to two stations. One was used mainly on the WARC bands and the second mainly on RTTY and the low bands. The team left Mongolia on 12 April. QSL via I0SNY, Nicola Sanna, Str Gualtarella 8/M, 06132, S Sisto-PG, Italy.

* Kerry **VK4MZ** was active as **VK4MZ/BY1QH** from Beijing. QSL to home call, direct only.

* Bangladesh. **S21K** is a newly licensed amateur and is resident in Bhola.

* The legality of the activity of Rene **FT5X/FR5HR** from Kerguelen and other parts of the French sub-Antarctic archipelago is in doubt. It seems that entry to these islands is restricted and one has to first have the French Antarctic Authorities (TAAF) permission for landing on the islands.

Once this is given, the French will issue the "proper" callsign, eg **FT5XN**, etc. It seems activity using the call **FT5X/FR5HR** is not correct.

* Poland. Special event station **SN0JG** will be active from Gdansk until 30 June. QSL via **SP2BIK**.



Ed Hartz **ZL7IR** operating from Hotel Chathams.

* Cambodia. QSLs for **XUX0** should be sent to 7LIMFS, Yoh Yoshida, Shinko Bldg, 4-4-1, Arakawa, 116-0002, Japan.

* Switzerland. The Locarno Radio Club has activated the special call **HB5RL** to celebrate 200 years of independence for the Canton of Ticino. Special QSL via the Bureau.

* **H40AA** - Temotu Island. The international amateur team organised by the South China Sea DX team closed operations at around 1800 UTC on 12 April. It was reported that they made 65,000 QSOs.

* New QSL Bureau for Guam. It was reported that the new **KH2** QSL Bureau is run by the Mariana Island DX Association, Box 445, Agana, Guam, 96932, USA.

* Spain. A number of stations were on the air with the **EG** prefix and with suffixes **UIT**, **IUT**, **ITD** and **TID** celebrating International Communication Day on 17 May.

* Singapore - **9V**. **Jaya 9V1VGS** advises that all amateurs in Singapore will be permitted to use the prefix **9V8** from 18 July until 15 November 1998.

* Vatican. A new station was heard from the Pontificia Universita Lateraneuse, Vatican City, using the call **HV5PUL**.

* Cambodia. If you worked the stations **XU3MTM** or **XU7MTM** they were visitors from Korea's Telecom ARC. QSL via **HL2AQN**.

* The Chinese Radio Sport Association (CRSA) recently authorised the use of the **BI** prefix for use by IOTA expeditions.

* A number of Special Event stations were active in April and May. **IR0N** was celebrating the anniversary of the establishment of Rome. **EO5JM** was celebrating the 53rd Anniversary of the victory of the Great Patriotic War (WWII); QSL via **UU2JQ**. **TP4CE** was celebrating Europe Day on 5 May for the Council of Europe ARC. QSL via **F6FQK**.

* The **H40AA** group launched a special edition QSL card for which they are asking a \$US25.00 donation to benefit the Temotu Development Fund. This is a voluntary organisation headed by New Zealand's Dr Wilson, who is on the island group, coordinating a variety of projects to benefit the local population which is constantly afflicted with high malaria fever.

* During the World Football Cup in France (soccer to us Australians) which takes place from 10 June to 12 July, there will be ten special event stations from ten different cities in France, all having the prefix **TM**, the suffix **CMP**, and a district number which will run from 1 to 0.

* Pigeon Island. Jim **VK9NS**, operating from Pigeon Island in the Temotu Group, logged 15,760 contacts during a 14 day activity. He used the callsign **H40AB**. QSL

ICOM Clearly Ahead



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AMATEUR INFO ON THE WEB.

You'll find the Amateur Transceiver Radio Centre at 141 Gilba Rd. Girraween, Sydney, but you'll also find them on the web on www.australia.net.au. ATRC report plenty of hits on their website from interested radio enthusiasts. If you're an Internet browser be sure to visit their site soon for information and bargains on great Icom gear.

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ILLUSTRATION BY A.L. 06/10

via Jim B Smith H40AB, PO Box 90, Norfolk Island 2899.

QSLs Received

5N0T (4 m - F2YT); V8EA (6 w - JH7FQK, Ichio One Ujiie, 162 Shionosawa, Kohata, Towa, Adachii, Fukushima 964-02 Japan; VK9WM (11 w - VK4FW); ZL7IR (6 w - Ed Hartz K8VIR, PO Box 480, Green Valley, AZ 85622, USA); FT5XN (3 m - F6PEN); 3XA8DX (3 m - DJ9ZB).

Thank You

I would like to thank my friends who support my endeavour to supply you, the reader, with up-to-date information in this DX world. Special thanks are due to: VK2EFY, VK2EJM, VK2GJH, VK2KFU, VK2TJF, VK2XH, VK4LV, VK5WO, VK6LC, VK6NE, *DXCC News Release*, *OHIO/PENN DX Bulletin*, *QRZ DX*, *The 425 DX News*, *The DX Newsletter* and *The DX News Magazine*. ar

Education Notes

Brenda M Edmonds VK3KT

Federal Education Co-ordinator
PO Box 445, Blackburn VIC 3130

For some time now most of us have accepted that amateur radio as a hobby is in a decline. The intake of new licensees is not keeping up with the losses from various causes. The average age of examination candidates is rising, as is that of the amateur population as a whole. We are attracting very few young candidates. In addition, the WIA has the problem that its membership is an ever-decreasing percentage of the total amateur population.

Amateurs with whom I have discussed recruitment agree that we need to consider both aspects. We need to attract more persons of all ages into amateur radio, and we need to persuade more of them to join the WIA. As in all fields of politics, the lobbies with the most voices carry the most weight. The WIA speaks for the whole amateur population at both national and international levels, and has, in the past, gained increased privileges or negotiated more favourable conditions for all operators. However, it is supported by less than half the active amateurs.

Part of the problem is that so many of us are living in the past. We still see ourselves as the pioneers, builders and experimenters who were the norm a couple of generations ago. But today's generation of amateurs has other goals, interests and abilities, and we have little way of knowing the expectations of the newcomers. More importantly, we cannot sell amateur radio to this generation using the ideals of fifty years ago.

We need a profile of current new licensees in order to tailor our approaches to the interests of the groups we are trying to attract. What aspect(s) of amateur radio are encouraging young people to enter? What aspects appeal to the middle-aged entrants? What is it that a new recruit wants or expects to be able to do when licensed? How can we catch the attention of the section of the populace which has never heard of amateur radio?

The same type of questions apply to WIA membership. What is it that persuades an amateur to become a member of the WIA? What does a member expect to receive for the membership payment? What is he/she prepared to pay for what is received? Are we still emphasising the provision of services which are no longer relevant?

Once, years ago, I compared WIA membership to a Trade Union membership. This may no longer be politically correct, but to a large extent it still applies. In some countries, membership of the national Society is compulsory for a licence holder. Think how low our WIA subscriptions could be if all Australian amateurs were WIA members! And think how much stronger the WIA's voice would be in the negotiations! ar

RealNetworks Denies Its Audio Streams Can Be Recorded

RealNetworks has come under fire from the British Phonographic Industry, which has issued a warning to broadcasters that music played on the Internet using RealAudio software could be recorded using a widely available software called Audio Rack.

Meanwhile, Virgin FM's webmaster says RealAudio streams could be converted into .wav files but only at the audio quality set by the Web server "not the equivalent of burning a CD." [Courtesy TeleText page 998/TechWeb May 98 and Qnews]

Spotlight on SWLing

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VOA Change of Format

By now you will have heard about the change of format to the VOA from Washington. As from 0100 UTC on 28 May, the VOA English service commenced a rolling 24 hours a day, seven days a week, all-news format. This means that they have dropped some of their popular music programs such as "Music USA", "Now Music" and the still popular "Jazz USA" tapes with Willis Conover, recorded several decades ago. These music programs will continue, however, on their satellite feed to affiliated stations that relay VOA programs.

An all-news format has been waiting to happen on short-wave and VOA are first to institute a round-the-clock seven day all-news format. Breaking news stories can be also inserted at any point. This means that some regular programs will be shortened and incorporated into blocks.

"Communications World" shrinks from 29 minutes to nine minutes in the second hour of the Saturday output. However, there will be four separate groups of CW, each lasting nine minutes, aired roughly every six hours. To hear the full program, you will have to catch the later releases. But, this won't be possible as some won't be aired over short-wave at all; the VOA at present does not broadcast in English for the full 24 hours. "Communications World" will be aired at 36 minutes past the hour every odd hour, that is at 0136, 0336, 0536, 0736, 0936, 1136, 1336, 1536, 1736, 1936, 2136 and 2336 UTC Saturdays. Now it is easier to hear, even though it will be segmented, compared with the four releases previously available.

This change of format only applies to English language programming although specific regional programming, such as "Dateline Africa", will continue. Also, programs in "Special English" are to be separated entirely from this format, and heard on dedicated channels. I anticipate that this all-news format could easily be slotted over

other re-broadcasting outlets which will be able to insert it into regular programming.

Power Line Interference

My February column referred to the increasing phenomenon of power line radiation. Rodney Champness VK3UG of Benalla, Victoria wrote to inform me that there was an article published in the June 1987 edition of this magazine, which he wrote in co-operation with Vic Pleuger. Its title is "Power Line Interference - A Department of Communications Viewpoint".

It was written in 1986 and naturally there have been some changes since then, with more high-powered TV stations. Yet, if interference persists, as it often will, the average citizen is likely to be bewildered by the complexities involved and probably back off. Rodney also suspects that the levels of power line interference have risen.

Were you aware that power line interference (noise) is a broadband signal and is radiated and reflected off the ionosphere, just like other radio signals? I was under the impression that AC line noise was only present over nearby power lines, yet AC line noise is heard well away from them and the only way this can happen is by their reflection from the ionosphere.

Tracking down the culprits is a superhuman task and within tight budgetary restraints it will often persist longer than it should.

Radio Prague

Also last month, I reported that I had not heard Radio Prague for some time. Vic VK4AXM in Beenleigh, QLD sent me a copy of their present schedule. He said that Prague's transmitters were always located in the Czech part of the country and claimed that the Slovaks developed their own transmitter site.

My information is that Prague was using Slovak sites before and after the two went their separate ways. The present 9440 kHz signal from Bratislava is still quite strong here.

Vic says that Radio Prague can be heard very well at his location. The best time to hear it is between 2130 to 2157 on 11600 kHz. The schedule also says that between 0700 and 0730 it is on 7345 and 9505 kHz which may be audible here. I discount the release between 0900 and 0930 as I don't think the higher frequencies of 17485 and 21745 kHz are propagating in mid-winter, nor are they beamed in this direction. The transmitters are at Litomysl and are only 100 kW, compared to the 250 kW Radio Slovakia International has at its disposal.

Vic also says that there have been no funding cuts, although other delivery methods were considered. If you want to get the latest, both Radio Prague and Radio Slovakia

International have Web sites. Radio Prague is at <http://www.radio.cz/> and Radio Slovakia is at <http://www.slovakradio.sk/rsi.html>.

QSL Cards

Some SWLs and DXers enjoy receiving and sending out QSL cards to stations, mostly amateur, they hear. Many become frustrated at the return rate. Hans Kiesinger L40370 of Maroochydore, QLD thinks it has a lot to do with where you are located.

Hans has been active in the hobby in Switzerland, Thailand and now in Australia. When he was in Thailand the return rate was 60%, whilst in Switzerland the response was only 28.5%. He says it is too early to determine what the response is here in VK.

When I was an SWL, only 20% of QSLs would be acknowledged. When I received my amateur call, VK7 was still considered a DX rarity and the response was pretty good, although low domestically. Now that there are more VK7s, their QSL cards are less rare.

Relaying Sites

Last month I mentioned that the Juelich transmitting site was relaying several international stations besides Deutsche Welle, the German External service. I was astounded to learn that 40 separate organisations now utilise the site.

Senntech, the South African transmission service, has also entered the scene and has been relaying African and international stations such as RFI, Radio Netherlands, the BBC, and the Irish National Radio Trans World Radio, also a clandestine Nigerian opposition station which does not appear on any of their schedules.

Twelve months ago the BBC External services privatised their world-wide senders and the successful tenderer was Merlin Communications. Now they have commenced a weekly program in their own right, by relaying several British commercial stations over short-wave. The transmissions are on Wednesdays/Thursdays from 1800 UTC to 0200 UTC. A variety of channels are used from several sites.

If you hear Radio Caroline, or Media Zoo, you are not hearing a pirate station, but Merlin. These weekly transmissions are still only a test to gauge possible interest from other potential users.

Midwinter Propagation

Don't forget the midwinter phenomenon at around 0200 UTC when European signals propagate over the South Polar regions, particularly on the 49 and 41 metre allocations. Signals have a very fluttery characteristic for a while until the propagation moves further away from the Polar region.

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VHF/UHF

An Expanding World

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All times are UTC

US 78 GHz Mark Set

Emil Pocock W3EP in *QST World Above 50 MHz* for May, in reporting the newest additions to the US record book, also includes the first-ever contacts in North America on the 78 GHz band. Lars Karlsson AA6IW and Will Jansby W0EOM made their first attempts last 28 November, according to an account that appeared in the January/February issue of *Feed Point*.

The pair made a two-way contact over a 4.6 km optical path in Stanford, California. Both stations used harmonic multipliers for both transmitting and receiving, a common solution to generating signals at such high frequencies. AA6IW was able to generate about 2 mW this way to an 18 inch reflector antenna, while W0EOM made do with considerably less than 1 mW to a 12 inch dish.

After their initial success, AA6IW and W0EOM made a CW contact at 12.7 km on 11 December. Signals were 5 dB above the noise. In the absence of any other claimants, this becomes the new US distance record on the 4 mm band. Congratulations on a tremendous technical achievement! Will and Lars have plans to improve their stations and attempt to extend the distance. They have a worthy goal, as HB9MIO and DK4GD made a 114 km contact on 75 GHz nearly three years ago.

Other US records in the very high spectrum area are: 120 GHz, 1.1 km; 142 GHz, 3.8 km; 241 GHz, none reported; 474 THz (Red Light), 192.6 km; and 678 THz (Green Light), 248 km.

So now it's over to the VK Microwave operators to increase those distances!

Extraordinary Pacific Ducting

The reliable eastern Pacific duct has supported contacts on 144 MHz through 5.6 GHz between Hawaii and the western US coast at distances of 3,700 to 4,330 km. There has been good reason to think that these

distances could be extended, perhaps considerably (see the article in March 1996 *QST*, pages 41-46). This speculation has recently been given a huge boost by a report from Shel Remington NI6E (BK29) on Hawaii.

Shel has been monitoring the FM broadcast band for several years for signs of stations from the mainland. On 13 February, just after 0420, he began hearing a Spanish language station on 89.5 MHz, which he later concluded must be XHME from Jalisco, Mexico! Within an hour, he found XHPVA (90.3 MHz) also from Jalisco and XHMZO (92.9 MHz) from Manzanillo. These are Pacific coast cities about 5,200 to 5,300 km from Hawaii.

They are surely among the longest reports of tropospheric ducting anywhere in the world, and the implications of this report are obvious. Probably the next step is to encourage some dedicated VHF operators along the Mexican coast to take advantage of future occurrences of such ducting, as this is probably not a one-time event. Indeed, Shel had heard another Mexican FM broadcast station over a three-day period in June 1995.

SMIRK Again Urges the Move to 50.2 MHz

The Six Meter International Radio Klub has re-iterated its strong support for moving the ordinary six metre calling frequency to 50.2 MHz and opening up 50.1 to 50.2 primarily for DX work. Bill Tynan W3XO reported the results of the SMIRK board of directors meeting on 31 January. Also in attendance were well known six metre operators N5TX, K5ZMS, W5OZI, W6JKV, and KC5TX. Bill listed seven reasons in support of the plan, summarised here:

1. A DX window helps everyone, especially low power stations not able to move higher power stations out of the way.

2. A DX window helps DX stations, because they will not suffer strong QRM from stateside and lower-tier Canadian stations working across the continent.

3. Due to the tremendous increase in six metre activity as a result of the large number of new rigs now available, the current 25 kHz wide DX window will be woefully inadequate to support the DX and stateside activity that is certain to be present during this solar cycle.

4. In addition to being too narrow, the current 50.100 to 50.125 MHz DX window is also inadequate because a substantial portion of it suffers QRM in the vicinity from TV sets, computers, and other electronic devices.

5. A calling frequency at 50.2 MHz makes good sense. Most VHFers are accustomed to the two metre calling frequency of 144.2

MHz. Having a similar spot on six metres should help alleviate confusion, especially among newcomers.

6. Local, Es and F2 transcontinental QSOs will be just as viable above 50.2 MHz as below. Weak signal F2 backscatter QSOs may actually be facilitated above 50.2 MHz, as they will suffer less QRM from DX stations and others trying to work DX.

7. Despite what some may contend, most equipment, including antennas, works just as well in the vicinity of 50.2 MHz as around 50.125 MHz.

Six Metres

John VK4FNQ reports a good opening on 30/3. From 0240 to 0928 he worked V73AT, KH6VP, KH7R, KH7U and VK4AFL (by scatter). At 0928 V73AT went from 5x3 to 5x9. They tried 28.885 MHz at 0950 when signals were 5x9 on six but nil heard. It appeared the signals were scattering up the coast from VK4DO 5x3 and VK4BRG 5x2. H44 Operations

Trevor Benton VK4AFL/ZL1AL/H44AL filed this report. *A brief resume of six metre operations at Honiara on 27-29/3. A total of 17 contacts were made, 3 to JA, 1 to BV and the balance to VR, most signals were S9 except the JAs which were weak. All contacts were made between 1000 and 1200 on 28/3. H44AL was issued without any problems (after arrival) for the sum of AS4! I intend to renew it prior to expiration 31/12/98 for use in 1999.*

Equipment comprised of an IC 706, Timewave DSP unit and a 4 el Yagi at 6 m. All was "installed" at the Honiara Hotel with no management problems at all. Lack of television at H44 was a decided advantage too! The hotel is located 61 m above sea level with a reasonable take-off in most directions, especially west through north east, though very poor to the south.

This is a very good DX location, especially for F2 and it will be interesting to see how the H40 expedition fares, though I think 1999 and beyond will realise the full potential of the area.

Ten metres was available on almost a 24 hours world wide basis.

Mike Farrell VK2FLR said that, just for the record, the 30 March event produced only 49.75 MHz video in Sydney plus one JH0 calling CQ on CW on 110. The only station who appeared to be aware of what was going on was VK2DN. Later this year, things should be different.

Roger VK5NY: *On 5/4 I worked my first JA for the new cycle, JH6VXP 5x5 at 0949. Other JA contacts have taken place from VK5 during the past few weeks. My contact was very brief and at first I could not hear the JA being worked north of me by VK5ZBK about*

40 km away. He faded out and turned up here so it was a very selective contact; another JA called at the end of the QSO but could not identify.

On 6/4 from 0616 I worked a good fill of JAs on 50.150, JA1, 8, 9 in a 25 minute window. Signals up to S9 but most were S2 with QSB. Could hear a JA working a VK4 on 50.120.

From Steve VK3SIX/KL7SIX: *Use of 50.125 is proving to be a boon to six metre operating from the south of Australia as it helps to side-step the operators with a mind set that 50.110 is the only place to go.*

Today 9/4, commenced about 0450 with the usual R1 TV at 559. Around 0600 the typical Asian indicators began to build including two new offsets on TV 49.751.6. Also some light 48.240/250 video was logged at 0700. At 0705 JS2TPM was worked followed by Yoshi JE2DWZ. The JA2IGY beacon was 539 and JR2HCB worked on two-way CW very weak

The band then shifted to the west with JA6YBR in at 0718 and for at least two hours. At 0800 tones on 47.750/45.950/45.942/45.695 were logged

At 0800 the VK8RAS beacon from Alice Springs PG66 was in weakly with QSB. At 0830 48.2604 Kota Kinabalu appeared showing the path was shortening into SE Asia. At 0920 a string of JAs were worked including JJ6UAR, JA6LZG, JH3OWD and surprisingly, JR6GV 5x9 from PL36 Naha Okinawa.

JH4ISQ PM54, JH3IMR, JR2CQS, at 0945 JA3EA at 0947 and running up to 1000 JF2VNV, JE1KKV, JA6LPW/PM53, JE2UAZ, JA4IFV, JM1LIK, JH4EHF, JH4RCD/1, JA4LKB. Last heard at 1030 VK4ABP beacon Longreach 539 52.345 and VK8RAS PG66 559 50.0475.

Shiro Sakai JH4PHW reports via the JA Cluster that JAs made many contacts during early April. A summary follows:

1/4: 0306-0647: 3D2TN, 9M TV, N7ET/DU7. 2/4: 0429-0500: FK1TK, V73AT. 3/4: 0713-0854: V73AT, ZL2TPY, VK61P, VK6WD, VK6RPH/b, BV2PU, N7ET/DU7. 4/4: 0345-1201: VK TV, FK1TK, VK4GPS, VK4KK, VK3SIX, VK8RAS/b, 9M6CT, BV2SR. 5/4: 0325-1310: FK1TK, VK6RPH/b, VK8RAS/b, 9M2CT, 9M6CT, VK3SIX, VK5BC, VK4TL, 9M2NK. 6/4: 0335-1233: VK TV, VK8RAS/b, VK3SIX, VK4WTN, VK4BRG, VK5BC, VK4CRO, VK5NY, YJ8UU, V73AT, VK8PN. 7/4: 0644-1010: VK3DQJ, VK2PB, VK2MZ, VK2BA, VK4JSR, VK6JQ. 8/4: 0520-0535: V73AT, VK4RO, VK8RAS/b; 1235 VK6JQ. 9/4: 0501-0953: VK3CNX, VK3AMK, VK3XQ, VK3SIX, ZL2TPY. 10/4: 0253-1053: FK1TK, ZL2AGI, ZL2KT, N7ET/DU7, YJ8UU, VK6ACY, VK3XQ, VK1RX,

VK3SIX, VK2QF, VK3DUQ, VK5DK, VK6JQ, VK8RAS/b, VK4FNQ, VK7RAE/b, A45ZN, S58J. 11/4: 0454-1050: VK8RAS/b, VK2DN, VK3SIX, VK4GPS, VK6TRC, VK6TRG, VK6YU, VK6BAJ, VK6RO, VK6YAG, VK6AOM, VK6JJ, VK6RPH/b, VK6KRC, VK6ZRY, VK4BLK, YJ8UU, BV2PU, 9M2NK, 9M2KT, P29KFS, BV2SR, V73AT, VK3AMK, VK2DN, VK4YK, VK4JSR, VK4JH, VK8VF/b, JR6YAG/b. 14/4: 0344-1152: V73AT-N7ET/DU7, P29KFS, 9M6CT; JI1WMI-9M6CT, V63AO; JA1RJU-V73AT; JA5GJN/4-9M6CT; VK3SIX-JH1DPJ, JH1LJU, JA1ETO, JR2HCB; FK1TK-JI1NJ; P29KFS-JF2HEV. Heard: VK8RAS/b, VK4RGG/b, JA7ZMA/b and UA TV.

Rod McNabb VK3DQJ (previously VK3YBC back in the 70s) reports that his QTH is now at Taycroft, on a small farm about 80 km north-west of Melbourne and far enough from the city to avoid the inevitable QRM. Elevation is approximately 600 m asl, a windy location prone to lightning strikes! Also operates on 144 and 432 MHz.

During the equinox up to 14/4, JAs every day usually around 0400, but also from 0600 to 1000. Asian TV as well. On 7/4 a brief opening around 0400 and worked JA9IPF at 0414. Later at 0735 JAs again. It was like the openings back in the late 1980s. Wall to wall JAs, with signals well above the S9+ and little or no QSB. Signals finally started to drop just after 0800 and the band remained quiet until 0928, when it was on again! The last station worked was JR1EAX at 1010. Total - 57 JAs, all areas except 7 and 8.

8/4: *A brief opening from 0930 to 1017 to JA6/7. Nothing on 9/4 and 10/4 due to work commitments. Small openings since. Rod said he was surprised to hear so much CW on six metres, much of it machine generated. After many years operating he is still entranced with six metres and is looking forward to Cycle 23. Thanks for writing Rod. Alaska*

Steve VK3OT/SIX advises that: *As KL7SIX I will be active from 21/9 at the equinox until 21/12 at the solstice. Gear will be some power and decent antenna from BP51 with a little help from KL7FZ. Beacon VK3SIX is being taken to KL7 and reprogrammed 20 watts and 4 el Yagi on 50.0535 MHz. Suggest best time to work KL7 will be around early to middle December, maybe earlier. Liaison on 28.885. Also QRV KL9/HL9 from 17/9 to 20/9 and JA from 12/1 to 19/1 1999.*

Major Sun Flare

On Sunday, 3 May a phone call from Steve VK3OT alerted me to a CME proton event occurring that afternoon. At 0330 six metres was blanketed with white noise which peaked to S9 with the antenna pointed at the sun.

The rise and fall of the flare strength could be easily observed in the AM mode. The same noise was evident on 144, 432 and 1296 MHz, at diminishing strength as the frequency was raised, but still quite noticeable on 1296. The noise remained until sunset.

On 4/5 an e-mail to the VK-VHF Reflector by Mike ZL3TIC said that at 0400 a major Aurora was in progress with video on 45.240, 250, 260 5/9+, 46.240, 170 5/5, ZL3SIX/b 5/9 via the Aurora path. This is about the strongest Aurora I have heard in a long time. Also major solar noise up to 40 dB over 9.

Trotting Around the Pacific

By letter, Jack Haden VK2GJH provides information regarding his expeditions around the Pacific.

He plans to operate from Nauru as C21JH for two weeks from late August or early September and will be seeking six metre contacts. He says there may be a side trip to Tarawa where he will possibly spend one week as T30JH.

Equipment will be an IC-736 HF to 50 MHz with 100 watts on all bands. On six he will use a five element Cushcraft antenna. He says: *If I cannot obtain an additional five element for Nauru (no antenna for six at present secured for Nauru), then the trip will operate in reverse as I will take my five element from Tarawa and carry it as passenger luggage to Nauru.*

Does anyone wish to donate a five element for Nauru? If one can be secured it can be left with a resident Nauruan resident amateur for use following my departure; I think C21RK has six metres but lacks a decent antenna, maybe C21NJ also has six but I am not sure.

QSLing will be direct only through Jack's Sydney address (PO Box 299, Ryde, NSW 1680), and must include a SAE and return postage; in the case of VKs it will be a 45c stamp on the envelope.

We can only hope that propagation will permit signals to reach Australia. Distance from Nauru to VK5 is around 4000 km. Many JAs also need C21.

Two Metres and Above

The following brief message arrived from John VK3KWA too late for last month. He said that on the evening of 3/4 VK5VF/b and VK6RTW/b on two metres were audible in Melbourne for several hours.

On 4/4 late morning Wally VK6WG was heard but not worked. Around 0200 VK5NY was worked on 144, 432 and 1296 MHz. Enhanced conditions disappeared around 0400. Thanks John.

Roger VK5NY sent the following: *On 4/4 at 1551 I worked VK6WG 1296 5x3, 432 5x9, 144 5x9. This started a long line of QSOs both to the west and also to the east.*

I ran a keyer on 1296.400 with five watts to a bay of 4 loop Yagis pointing to Wally VK6WG. We found strong signals on 1296 peaking to S7 and on occasions to S9 over the next 12 hours. A very steady signal with no QSB on 1296 would indicate a stable duct across the 1800 km path. No turbulence or air movement across the ocean for many hours.

At times, 144 and 432 were producing rock crushing signals. My last contact to Wally was at 0137 on 1296 for 5x7 to S9. It appears the peak was happening in this time slot. Following at 0202 I worked John VK3KWA on 1296, the other direction to Melbourne at 600 km with marginal signals of 5x2 5x1.

The Esperance beacon VK6REP on 144.566 was not heard at 0137, although I had copied it to S7 at other times. The swing in diversity between Albany and Esperance beacons was many dBs. Comparing the weather maps of 30-12-94 3 pm and 4-4-98 9.30 am, it can be seen that two slow moving high pressure cells of 1029 and 1030 mB were centred close to the coast, virtually heading over Adelaide, both with very wide pressure gradients indicating calm air across the Bight.

Stations worked to the east on the 4/4 - 144 VKs 3AMH, 3CAT, 3TMP, 3TBM, 3FIQ, 3AXH, 3ZQB, 3ZL, 3KWA; 432 - 3KWA; 1296 - 3KWA. Beacons heard 144 3RTG Melbourne S2 (this a rare one for me), 5RMG near Mount Gambier S9+, 3RGL S5, 7RAE NW Tasmania S2; 432 - 5RMG S7 and 3RMB Ballarat S5 for many hours.

Stations worked on 5/5 (Sunday morning) - VKs 3XPD, 3AFW, 3ZLS, 3AUU, 3EFX, 3CAT, 3ZL, 3DZY, 3KLO, 3BTM; 432 - 3BTM, 4x2 strong QSB; beacons heard - 144 5RMG; 432 7RLES2. Had to work via repeater 7RAE to work VK7ZMR to get a VK7 in the log. Conditions to the west for the morning - no Albany beacon, Esperance S2 as expected with the high moving east.

No meteor pings on the usual 144.200 morning aircraft skeds from VK1/2/3. I get a buzz when I hear such things as Z!! 2!!VK!!B!!ZAB from the band noise on those skeds some mornings.

David VK5KK reports: A late opening to Albany occurred on 3/4 when the VK6RTW beacon appeared around 0830. Apparently signals peaked at around 1500 with VK5NY working VK6WG on 1296 MHz with good signals. On 4/4 signals held up past mid-day (0230 UTC) on 144 and 432; VK6WG was still 5x8 on 144 and 432 MHz to VK5KK around 0215 with signals still being heard from VK6WG on 1296 MHz, although not as strong as earlier. The beacon was heard through to about 2300 on 5/4, however conditions had slid well south by then.

On a separate note Every now and then you will hear, on 50 and 144 MHz, poor

sounding and distorted signals from stations running equipment that has a serious fault or simply isn't properly set up. In one case just recently, a station near Adelaide on 144 MHz could be heard +/- 50 kHz from his operating frequency even though his main signal wasn't strong! From observations it would seem that the driving transmitter was attached with a poorly matched input to an amplifier. This made it almost impossible for several others to work any weak DX stations, due to the splatter from rather long-winded overs!

True, it is a fact of life that some VHF transceivers output spectrums don't measure up to the same standards as their HF counterparts, however it is not difficult to

... six metres was blanketed with white noise which peaked to S 9 ...

correctly tune a commercial transceiver and/or amplifier combination, to obtain a clean signal with minimal test gear! Didn't part of the exam we all sat for, cover this? Speech processors need also to be correctly adjusted. At best, high levels of compression will only help when signals range from nothing to weak, not 5x9+20 dB. Sorry, but after hearing a few bad ones I have concluded that a speech processor to some is about the same as giving a Porsche to a 5 year old!

Beacons

A message on 30/3 from Rod VK4KZR said VK4RTT (Bunyas Mountains) on 144.4392 MHz zero beat is now on air. It is A1 keyed. The Brisbane VHF Group is currently working on the hardware for the 432 and 1296 MHz beacons. Also a decision has yet to be made on a permanent home for the beacons.

South Africa

A letter from Bill Hosie VK6ACY advises: I recently travelled again to South Africa where I now spend about half the year. When there my callsign is ZS5ACY.

As you are aware, I have an interest in VHF, 50 and 144 MHz in particular, with emphasis on exploring the Indian Ocean path between Western Australia and South Eastern Africa, ZS5 and FR5. I conveyed to Mike Bosch ZS2FM, VHF editor of Radio ZS, updated information relating to beacons and other activities in Western Australia.

Mike asked me to advise the Australian fraternity that the beacon ZS2SIX is now

operational on 50.005 MHz at a power of 25 watts. Grid square is KF25ux. The antenna is a dipole which favours VK. Also, there is an increasing level of FM activity on 50.450 MHz in South Africa with horizontal directional antennas. Mike hopes that this activity will increase the number of potential operators with horizontal antenna for long haul contacts despite the mode being FM.

Finally, the other six metre operational beacon in South Africa is ZS6DN on 50.050; however the Yagi antenna for this beacon is pointing north, for this is the direction where most contacts are made from South Africa to the Mediterranean area.

Now Contest

Rod VK2TWR has suggested the following: I would appreciate your feedback on the idea of a contest to be held early to mid November for two metres and above, to be called the Ian Berwick Memorial VHF Contest, in memory of Ian's enormous contribution to amateur radio.

The contest would be designed to promote portable participation in particular and to take advantage of the very good conditions generally at that time of year. It is envisaged that the rules would be similar to those used in the 24 hour VHF Field Day in January.

Any comments or suggestions would be gratefully received. We have time to organise the first contest for this November if we have enough enthusiastic people behind the idea. Looking forward to hearing back from you all.

In regard to the above, I sent e-mails to about 20 operators in VK5 and VK6. Several have responded, generally supportive of the idea, but not all favour the naming. No disrespect intended for the late Ian Berwick, but with the thought that there are quite a few VHF/UHF operators who have contributed significantly to that particular amateur radio field. It seems a more neutral name may be better accepted, perhaps simply The November VHF/UHF Field Day Contest or similar. Over to you for comment.

Closure

The point has arrived where I must stop. I did have a number of other items for inclusion this month but there has already been considerable pruning of information to arrive at the present state.

Closing with two thoughts for the month:

1. It is not the employer who pays wages - he only handles the money. It is the product that pays wages; and
 2. The chief deduction most people make from their income tax is that government costs too darned much.
- 73 from The Voice by the Lake.

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AMSAT Australia

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Yoshi Takayasu Visit

Yoshi JA6XKQ works for NEC as a Satellite Systems Engineer. He has been with NEC for 22 years and was in Melbourne recently working on his latest project, a mobile phone system based on satellites. Graham VK5AGR alerted me to Yoshi's wish to meet some of the local AMSAT users during his stay in Melbourne. We arranged for him to meet some of the Melbourne gang and in April he made the trip to Milawa to stay with me for a weekend.

I don't think Yoshi had ever seen a WiSP station operating, but it took him only a few minutes to work it all out before he was operating the station and sending messages to Graham and others like an old hand.

Yoshi has just returned from Orlando where he installed the SCOPE camera in P3D. He was the leader of the five member SCOPE development team. He managed to keep the whole team together for nine years as the project developed. No mean feat! He was also involved in the design and construction of the JAS satellites.

One of my closest amateur friends, Richard Robbins VK3ARR/W8VNE, also works at NEC in Melbourne. Richard had entertained Yoshi at his home at Rosebud a few weeks earlier, and Yoshi had also been to see Doug McArthur of moonbounce fame.

Yoshi did a moonbounce project for his university final year. He was experimenting with the earliest GaAsFETs when they were state of the art and mere mortals like us had never heard of them. He was given a GaAsFET for his project by the guy who invented them!

We didn't play ham radio all the time. We spent some time touring the district. We talked about Sputnik and I told him I had an original recording of the first Sputnik. He was very interested and he recorded one minute of it as a WAV file on his laptop computer. The recording, along with details of how it was made over 40 years ago, are now on the JAMSAT web site.

Yoshi is also interested in astronomy. We spent some time outside in the yard looking at the night sky. He wanted to see some of the southern sky objects, in particular the 'coal-sack' and the 'Clouds of Magellan'.

Yoshi's interest in astronomy spilled over into the SCOPE project. Its original design specs called for it to be capable of planetary photography. The resolution of the narrow angle system is sufficient to enable planetary photographs to be taken but this aspect had to be abandoned when it was decided to go for three axis stabilisation and earth pointing rather than spin stabilisation. Three axis stabilisation makes pointing too difficult to contemplate planetary photography. The wide angle system should give an "astronaut's view" of Earth and the narrow angle system should rival the NOAA's for detailed photographs.

Yoshi will be back at NEC, Melbourne in June or July for maybe three months. He hopes to get over to VK5 on that occasion and meet up with the local AMSAT gang. I'm sure they will enjoy his company as much as I did.

Last Load of Rocket Fuel for MIR

A freighter rocket delivered the final load of rocket fuel to MIR last month. This will be used during the planned de-orbiting procedure to be carried out later this year. Being a large structure, much of which will survive re-entry, MIR is expected to be guided to splash down somewhere in the Pacific ocean. This will end an era in amateur radio operations in space. Many will remember the wonderful QSOs with the Russian crew members over the years. We can only hope that the International Space Station will enable this tradition to be continued.

Last Shuttle Flight to MIR, Andy Thomas Comes Home

By the time you read this column, Andy will be counting off the last few days before the final Shuttle flight to MIR is due to pick him up and return him to Earth.

His presence on MIR has been quite refreshing. It has meant a return to the 'good-old-days' when the operator had the time and inclination to chat for a while. How fortunate we were that the last visiting scientist to MIR was an Australian. Andy is to be congratulated on his patience and good operating practice.

Exciting New Amateur Radio Satellite Launches

At the time of writing, TECHSAT-2 from Israel Amateur Radio Society and TMSat-1 from University of Surrey and the Thailand University Team are both being prepared for

AMSAT National Co-ordinator

Graham Ratcliff VK5AGR

E-mail: vk5agr@amsat.org

AMSAT Australia Net

Control station - VK5AGR

Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.

Frequencies (again depending on propagation conditions):

Primary - 7.068 MHz

(usually during summer).

Secondary - 3.685 MHz

(usually during winter).

Frequencies +/- QRM.

AMSAT Australia Newsletter and Software Service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand, and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia

GPO Box 2141

Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, <ftp.amsat.org> and following the sub-directories to "KEPS".

launch. If all goes well they should be in orbit and undergoing commissioning as you read this column.

A second TMSat is due for launch later this year. All these satellites carry amateur radio packages running 9600 baud FSK data similar to UO-22, KO-23 and KO-25.

SEDSAT-1 from the University of Alabama is slated for launch in October. It will carry a mode L digital transponder and a mode A analogue transponder. The mode A capability will be eagerly awaited by many considering the current situation regarding mode A.

New NOAA Weather Satellite

NOAA-K, or NOAA-15 as it will become known, is due for launch as I write this column. It is the first of a new generation of weather satellites from NOAA (National Oceanic and Atmospheric Administration).

All weather satellite buffs will be looking forward to this new Earth imaging satellite. Hopefully, it will encounter no glitches and will be released into the public domain smoothly.

The NOAA series of weather satellites has afforded many amateurs the opportunity to hone their skills in the popular area of remote imaging which is becoming an almost

standard part of new amateur radio satellites these days.

JAVA Satellite Software Released

John Melton, N6LYT/G0ORX, has announced the preliminary release of his Java Satellite Ground Station Software at <http://www.qsl.net/n6lyt>. This software implements

a fully automated Digital Store and Forward Satellite Ground Station.

It includes: KISS Protocols, AX25 Protocols, PACSAT Broadcast and File Transfer Protocols, Message Composer, Message Viewer, Orbit Propagation, Satellite Scheduling, Radio Control, and Rotor Control. The software has been successfully run on Windows/95, Linux, and Solaris.

John is interested in receiving email messages from anyone who decides to download and run his software. He may be reached at n6lyt@qsl.net.

Next Month

Six monthly update of current amateur radio satellites.

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Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:

LJ (Len) BRINES VK2LEN.

Colin Wymess Johnson VK2YJ

Colin Johnson VK2YJ sadly passed away on 10 October 1997, at the age of 79 years.

He passed his AOCIP on 15 February 1938 and was given the callsign VK2AJC. This was changed to VK2YJ the following year. Colin was very interested in two metres from his excellent location. He built several HF beam antennas but they did not last long as the high winds took their toll. He was still active up until his death.

In the early war years he was involved in small ships patrolling the Newcastle defences. He built and raced speed boats with Royal Newcastle Motor Yacht Club at Toronto, where he was a member.

His other interests included stamp collecting and model trains, as well as weight-lifting.

Colin was the fourth employee at Edmunds Moir Newcastle Pty Ltd where he was a bookkeeper, and later became the general manager.

In his forties he married Elizabeth, the great love of his life, and built their home in Hickson Street, Merewether. Adrian and Danielle were born and life was sweet.

In 1975 he suffered heart problems and underwent heart surgery. In 1980 Elizabeth died, a great loss which he found hard to

accept. Nevertheless, he made his children the focus of his life, and greatly enjoyed his grandchildren, Ellie, Alex, Christopher and Katie.

He will be greatly missed by his children and grandchildren.

His memorial service took place at St Augustine's, Merewether on 16 October 1997. Norm Stanley VK2BNS

John Gray VK2BGJ

The death occurred in April 1997 of John Gray VK2BGJ a well known amateur operator and experimenter in the Hunter area.

John was an amateur for over thirty years and was well liked and respected in both the amateur and professional electronic world.

John worked in the electronics industry and had been a Technical College lecturer before commencing his own very successful mobile radio enterprise. He had a quiet and friendly nature and was a ready source of help and information to other amateurs.

John is survived by wife Joan and two sons. Tony O'Brien VK2BOA
Ian Fyfe VK2ZIF

Len Brines VK2LEN AFARN No 69

Len VK2LEN passed away on 13 April 1998.

Len served with the RAAF during World War II as a Radar Mechanic with 10 Squadron (Sunderlands) and then served the amateur radio fraternity as Net Controller of the Central Coast Amateur Radio Club and the Air Forces Amateur Radio Net. Len was an officer of the AFAR Net when he acted as Awards Manager.

He had a good radio voice, was blessed with a good memory for call signs and names and was always the gentleman.

I always looked forward to meeting with Len at the Gosford (Wyong) Hamfest. Bob VK4ACL, AFARN No 96

Werner Otto Haack VK3WOH

It is with deep regret that we record the passing of Werner after being ill for several years.

Born in Berlin in June 1924, he was trained as a blacksmith. He continued to build on and use these skills during the rest of his life in the metal industry.

Werner was a radio operator in the German Navy where he first became involved in radio communications.

He arrived in Melbourne in January 1954 and worked for many years with "Cyclone" in Melbourne and Launceston.

On retiring to Riddles Creek he renewed his interest in radio communications as a CBER, and finally by obtaining his full amateur call.

He made many friends through the hobby. This interest resulted in Werner and Ilse travelling to a number of local and interstate radio conventions. One of the early members of the Sunbury Amateur Radio Club when it was first formed, he could be relied upon to be involved in Club activities and give encouragement to others. He was frequently heard on the weekly net before his health started to decline.

Werner will be sadly missed by his many friends across the bands.
Ian Morris VK3DVO

Ivan James Searle VK5NSI

It is with sadness and regret that we report the passing of Ivan Searle VK5NSI on 27 October 1997 at age 63 after a relatively short illness.

Ivan received his licence in 1979 and was a keen operator in the 10 and 80 metre bands. In 1981 he took part in the VK/ZL Oceania DX Contest and gained first place in the VK 28 MHz eight hour section with a score of 66,066 points. In 1982 Ivan participated in the 10 / 10 International Contest and placed first in Australia.

During the 1980s Ivan collected 179 certificates for his World Wide contacts on the 10 / 10 net. In addition he received 91 awards and certificates from Australian and overseas clubs.

In 1980 Ivan and Jack Thomas VK3NTR, both being "Railway" men, formed the Railways Charter Net and produced certificates for issue to Railways Charter members worked on the 80 metre band. Ivan's devoted wife Audrey acted as Secretary,

keeping records of contacts and the financial side of the net.

During the life of the net, which closed in 1989, a donation of \$300 was made to the National Heart Foundation and, at the closure of the net, \$292 was donated to the Anti Cancer Fund. There were 64 Railway Charter members in the group.

Being a keen member of The Lower Murray Amateur Radio Club, and with his interest in Awards, Ivan introduced and managed the "Bunyip" Award on behalf of the Club. He also acted as Controller for the Club's Monday nights net for some years.

Another of Ivan's interests was the JOTA weekend each year when he made his station available to the Taillem Bend Guides at his home, or assisted with the Club station at Murray Bridge.

Ivan is sadly missed by his wife Audrey and family, and his many friends and members of the Lower Murray Amateur Radio Club.

He will be remembered for his contributions to the hobby of amateur radio. Colin Schick VKSJP

Sidney James Smith VK6SJ

Sid was born in 1918 and died suddenly at home in West Midland on 28 April 1998.

His radio interest goes back before World War II, but it was not until the early fifties that he took out VK6SJ.

He was a foundation and Life Member of the WA VHF Group and was instrumental in the incorporation of the Group. Many early meetings and post foxhunt functions were hosted by Sid and Clare.

Sid was also involved with the now defunct Radio Society of WA and for a time operated the club call VK6SR from his home.

Another great interest was motor sport; Sid was Secretary of the BSA Motor Cycle Club for many years and used to be quietly pleased to tell tales of his exploits at more than 100 mph on two wheels. In early years he provided communications with others for the Redex Round Australia Car Trials and for the Narrogin Car Club 1000 mile Trial in WA.

On the work front, post WWII he managed the family Bread Manufacturing business and, when that was sold off, joined the PMG Department broadcasting and worked mainly in country postings at 6DL Dalwallinu, 6WA Wagin and at ABSW5 Bunbury.

So much more could be said, but there are some great memories of good times together from nearly 50 years ago. In quietly spoken "Smithy" we have lost one of nature's true gentlemen.

So Long Sid.
Don Graham VK6HK

Pounding Brass
Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

Sending Morse Examination

This will vary with examiners; however, most examiners will bend over backwards to help you feel as comfortable as possible before you commence the test.

Make enquiries to see if you can use your own hand key during the examination. Most examiners won't mind this as long as you bring a patch lead along with you (more on this later). Use only the key on which you have been practising. Don't go out and buy that fancy key and expect to use it in the Morse examination without first becoming proficient in its operation, otherwise you will definitely fail.

If the Morse key is being supplied, try to find out whether it's a high mount or a low mount and change your sending style to suit; if not, make do with what you have.

Connect your key to whatever form of audio oscillator is being used, and adjust the volume and tone to a suitable level (at this stage you are given a test passage by your examiner to run over). Once this has been completed, make any last minute changes to your position, if need be.

Depending on the examiner, you might be given a new passage to send, or he might have you repeat the test passage previously sent. This shouldn't worry you because you have

already been through it and should feel a lot more confidence second time around.

Remember to start and finish with the commencing and ending signals. Your examiner will probably tell you there and then if you have passed or failed; if not, you will be notified by mail some time later.

Patch Lead

A patch lead consists of a cord between one and two metres in length. One end consists of a female socket, the other end two crocodile clips. The female end connects to the male plug coming from your Morse key and the other end clips onto terminals on the instructor's audio oscillator. It is quick and simple, and has no messing around with different plug adapters, etc.

Automatic Keys

I suggest you stay away from Semi-Auto keys and Iambic Paddles at this stage of your training, as these are much more difficult to use and require a lot more practice than the basic hand key. Only use them when you have become proficient in sending with the basic hand key.

Happy Morse - see you next month.

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Are you reading someone else's Amateur Radio?
Call 03 9528 5962 to get your own copy every month

WIA MORSE PRACTICE TRANSMISSIONS

VK2BWI	Nightly at 2000 local on 3550 kHz
VK2RCW	Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm
VK3COD	Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz
VK3RCW	Continuous on 145.650 MHz, 5 wpm, 10 wpm
VK4WIT	Monday at 0930 UTC on 3535 kHz
VK4AV	Thursday at 0930 UTC on 3535 kHz
VK4WIS	Sunday at 0930 UTC on 3535 kHz
VK5AWI	Nightly at 2030 local on 3550 kHz
VK5VF	Continuous on 145.650 MHz, 5 wpm to 12 wpm
VK6RCW	Continuous on 147.375 MHz, 3 wpm to 12 wpm

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Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator
 Freepost No 4, Rubyvale QLD 4702
 Tel: 07 4886 4168
 Packet: VK4KAL@VK4UN-1

return, or some others, like possums, take up residence!

Voice of America harmonics are still being heard on 14.240 MHz, and Voice of Russia has gone up to 7.105 MHz.

OTHR (Over The Horizon Radar) signals have been noted on a number of bands above 20 metres.

Also, a larger than usual number of RTTY signals have been noted. Please make every endeavour to get the shift and baud rate of any FIB station you hear.

There are still far too many intruders on our bands for our collective comfort.

How many have YOU actually identified and, more importantly, sent details about to me?

You can make use of e-mail facilities, if you have them, to notify direct the station technician of the offending intruder station. Address details are often given during or at the end of a transmission. This has been proved to be an effective way of removing intruders. But please let me have a copy of your e-mail for the records.

Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

Recycled Three Pin Plug Covers

If you come across some three pin mains plugs or extension sockets of the type you can remove (not the moulded type), that can no longer be used, don't throw them away.

The covers with the clamping nuts make good covers for coax plugs, PL-259 or N types, where exposed to the weather.

As with their normal use, slip the cover over the coax cable before you terminate the plug. When the coax plug is in place, slide the cover up over the plug and tighten the lock nut (see Fig 1).

I have even cut a small disk of aluminium or PCB to fit inside the retaining ring of an extension cord cover, drilled a hole in the middle to take a PL-259 chassis socket, and made an effective free socket on a coax cable to an antenna (see Fig 2). This is a lot less expensive than the difficult-to-obtain bought one. The new clear plug tops are even better!

Steve J Mahony VK5AIM
 19 Kentish Road
 Elizabeth Downs SA 5113

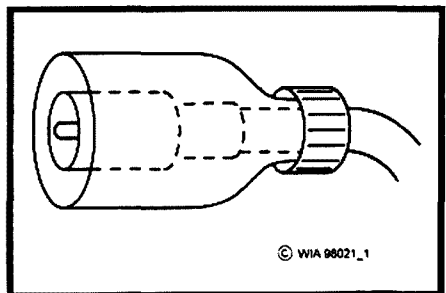


Fig 1 - Using a surplus three pin mains plug cover as a coax plug cover.

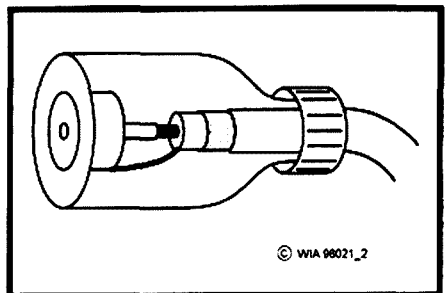


Fig 2 - An effective free socket on a coax cable to an antenna.

From the DARC Monitoring System comes: "Due to the combined efforts of all Regions" two very persistent intruders have vacated 40 metres, namely "Voice of Azerbaijan" on 7.095 MHz and "Voice of Russia" on 7.100 MHz. Thanks for your efforts.

However, for the local scene, do not forget to monitor these frequencies as they may

A summary of intruders logged during April 1998

FREQ	DATE	UTC	EMM	DETAILS
3.560	050498	1402	A3A	Rep Korea, political party speeches
7.002	2004	1130>	A1A	"V" BCN. Tashkent, UZ8, CIS
7.008	1204	1305	A3J	UiBC, non amat, poss Indonesia?
7.010	2104	1215	J3E	Mil area tfc, "Koramil" Indonesia
7.018	0104	1253	F2B	Variable, no intelligence
7.022	2704	1130>	NON	UiCAR, Obs 70 mins, 1.5 kHz wide
7.036	1704	0930	A1A	UiCW, 5 fig tfc, CIS?
7.042	0704	1430>	A1A	Calls, then "QTA QLX", CIS?
7.044	0704	2233	FIB	UiVFT, very fast RTTY
7.057	0804	1250	A3J	UiBC, non amat, M & F Asian group
7.059	0804	1233	FIB	UiVFT, bursts of CW tfc "ERV"
7.067	0704	2215	XXX	12 kHz parasitic
7.070	0704	1030	R7B	UiWBD, 4 kHz wide
7.093	2104	1500	A1A	Z4NI, 5 ltr groups, CIS?
7.098	2804	0010	R3E	UiBC, Jakarta mentioned
7.125	01014	2145	A3A	UiBC, German language
10.108	2204	1050	J3E/U	UiBC, non amateur, poss "hit/run"
10.119	0504	1330	A3J	UiBC, non amat, 3 freqs, Asian
14.014	2704	1215	A1A	UiCW bug key, figure groups
14.056	2004	1230	A1A	Calls NPJ4 or VICH
14.163	0204	1320	R7B	Bks to B9W/CW, tfc QRJ3, QRK3, RK
14.211	2704	0530	A1A	P7A calls PBM, CIS
14.240	3103	1334	R3E	Voice of America, 2 nd harm of 7.120
14.250	0904	0930>	A3E	UiBC, N Korea?
18.075	0404	1120	A3E	UiBC, S E Asia, non amateur
18.131	0404	1118	J3E/L	UiBC, Hokkien Chinese

All of 10 metres is loaded down with CB signals, including American as well as Asian. Many Asian operators are coming up on the 10 MHz band with no call signs and bad language. Those of you who can access this band should make it your business to harass them. It does work!

7.004 to 7.020 MHz, although busy with CW, is crammed with Asian intruders and others, so the same treatment should apply here. Defend your legal bands!

WIA Divisions News

Forward Bias — VK1 Notes

I'm pleased to once again present *Forward Bias*, the recent hiatus being a result of pressures on time, an element of complacency and doubts as to whether anyone actually read these brief missives. Thank you to the few individuals who enquired after the column and encouraged its reappearance!

As I write this we are a scant two weeks away from our May meeting, the first buy and sell/junk night of the year. For my part I shall be endeavouring to show restraint and not re-stock the office/shack with 'More Useful Things'.

Two items are worth noting (and here I take a punt on them not all being sold). The first are some nice little +5/+12/-12V power supplies that have been donated to the Division thanks to the efforts of Phil VK1PJ. These units are ex Sun Microsystems equipment and are of that firm's usual high build quality.

The second objects of desire are a number of Philips FM-900s made available thanks to the efforts of Phil VK1ZPL. Many of these units have come on to the market of late and are proving to be excellent units when re-tuned for operation on 2 metres. Reports suggest they are almost totally immune to pagers (yahoo!) and have very pleasant audio. Our ever resourceful technical group have the process of re-tuning and re-programming of EPROMs down to a fine art, I'm told.

At last night's committee meeting, much discussion ensued about future directions for the Division and our hobby generally. We've a number of proposals that we will be putting to the membership in the coming months; please tell us what you think, good or bad. A number of proposals border on the controversial, and another may be very expensive so it is important that you have your say.

Our thanks go to all who participated in the two recently held WICEN activities. Both were an unqualified success and a fun time was had by all. The organisers of the Canberra Two Day Walk and the Solar Boat Race (part of the Canberra Science Festival) have extended their thanks to WICEN, the

Division, and the many who helped in the field.

In coming events, our next general meeting will be on 22 June and will be a technical presentation by a guest speaker of interest to all. We're still finalising details at this stage so I'll direct you to the broadcast/Web site for details closer to the time.

With the colder weather now upon us, be assured that the heating in the Griffin centre works well, the coffee and tea is hot and the atmosphere warm and convivial. See you at the next meeting!

Hugh Blemings VK1YYZ

VK2 Notes

Portfolios Allocated After Election

At the meeting of Councillors of the VK2 Division of the WIA on Friday, 8 May 1998, it was decided that portfolios for the coming 12 months would remain basically unchanged. The major change for 1998/99 is that Michael Corbin VK2YC has been elected President of the Division. Senior Vice-President is Brian Kelly VK2WBK, Junior Vice-President is Owen Holmwood VK2AEJ, Secretary is Eric Fossey VK2EFY, and Treasurer is Eric Van de Weyer VK2KUR.

The remainder of the portfolios for 1998/99 were allocated as follows: Affiliated Clubs, Ken Westerman VK2AGW; Federal Delegates, Michael Corbin VK2YC and Eric Fossey VK2EFY; Membership, Eric Fossey VK2EFY; Education, Brian Kelly VK2WBK and Pat Leeper VK2JPA; Parramatta Property, Eric Fossey VK2EFY; Security, Eric Van de Weyer VK2KUR; Dural Officer, Owen Holmwood VK2AEJ; QSL Liaison, Geoff McGrorey-Clark VK2EO; NTAC Chairman, Geoff McGrorey-Clark VK2EO; Publicity and Public Relations, David Thompson VK2NH; Policy and Strategy Chairman, Owen Holmwood VK2AEJ; Olympic Games Chairman, David Thompson VK2NH; Deceased Estates, Michael Corbin VK2YC; Trash and Treasure, Pat Leeper VK2JPA; Special Projects Officer, Stephen Paul VK2PS.

Divisional President

Michael Corbin VK2YC fills the position of President of the VK2 Division. As most of you know, this is not the first time Michael has assumed the position of 'head honcho' of this Division. Maybe next month we will take an in-depth look at VK2YC and, shock! horror!, for the sceptics we might even be able to coax a suitable photo out of the archives of public office for you to put a head on the already huge shoulders of amateur radio

representation. Watch this space, you will be rewarded.

Old Timers Honoured at the New South Wales Division AGM

We had a terrific opportunity at the Annual General Meeting in April to recognise the long standing of some members of the WIA, NSW Division.

Secretary Eric VK2EFY says, "A chance remark on the telephone to our Parramatta Office (which resulted in an in-depth enquiry) brought to light a number of current members with 60, or more, years membership of the Division".

As a result of that, a proposal was put to the Board of Directors that perhaps such long service should be suitably recognised. The Board agreed and decided that, as suggested, three different and distinctive certificates should be presented to members attaining 50 plus, 60 plus and 70 plus years of membership.

Nine members were invited to receive their certificates at the Annual General Meeting on 18 April 1998. They were: A H Gray VK2IJ, 75 years; W L Woolnough VK2GW, 75 years; Sir Allan Fairhall VK2KB, 70 years; G W Dukes VK2WD, 67 years; W C Hall VK2XT, 67 years; N McNaughton VK2ZH, 67 years; R Weeden VK2PN, 67 years; N A J Gough VK2NG, 65 years; and J G Cowan VK2ZC, 64 years.

We hope they will be around for many more years!!!

The then President of the Division, Geoff McGrorey-Clark VK2EO, also presented Aub Topp VK2AXT, Division Librarian, with Life Membership, recognising 43 years of dedicated service to the Division. Congratulations, Aub!

Trash and Treasure

Last month we told you that we would be scheduling special Trash and Treasures at the Dural transmitting site, north west of Sydney. We've received a good response from this news as apparently people like to know just when the events will be held at Dural.

To recap, the Dural days will be held in March and November, with the other four events being held at Amateur Radio House at Parramatta. Trash and Treasures are held on the last Sunday of odd-numbered months of the year.

VK2 Gearing Up for the Sydney 2000 Olympics and Paralympics

Over the coming months you will hear more of the activities of the Sydney 2000 Committee of the Wireless Institute, VK2 Division.

One of the promising ingredients is a system called APRS, short for Automatic Position Reporting System. The Committee is working on the development of this system in Australia and hopefully will integrate it into the Year 2000 Olympics and Paralympics. It is being seen as a device which will forge the way for VK2 amateurs to introduce this cutting edge technology into the Games, showing that the hobby is not only keeping up with new technology but setting targets. Already APRS presentations have gone to several clubs in the state including Illawarra Amateur Radio Society, Liverpool and Districts, Waverly Amateur Radio Society and a lot more.

If you would like to find out about the Year 2000 Olympic Games and Paralympic Games, and what the Division will be doing for them, or you would like to find out more about APRS and its potential role, contact me at the e-mail or postal addresses shown below and we will do our best to arrange a visit to your club.

Affiliated Clubs Conference

Affiliated Clubs Officer Ken Westerman VK2AGW has asked me to remind you once again of the Affiliated Clubs Conference for 1998, which will be held at Amateur Radio House at Parramatta on Saturday, 13 June 1998.

If you wish to attend, agenda items and names of intended delegates are required at least two weeks prior to the conference. There will be lunch and dinner at a moderate cost, which will be advised. Coffee and tea, plus biscuits, will be provided. For further information contact the VK2 Divisional office. The conference will begin at 0900 local. Please arrive at least 15 minutes prior to this for registration.

The Year 2000

Speaking of Affiliated Clubs and the year 2000, it would be good to see which clubs would like to lend a hand with the many things that will happen around the time of the Olympics and Paralympics.

For example, there will be one or more special event stations at the time of the Games, which will have to be manned at all hours of the night and day to make local and international contacts. A roster will have to be made up. Think about this and register the interest of your members at the Affiliated Clubs Conference.

Thanks for the Support

I guess all that is left to be said on behalf of myself and my fellow Councillors is "thank you" for the support and vote of confidence. Here we are for another year to serve you and the fine hobby of amateur radio. Please allow

us to do that by approaching us with any matter in which you think we can be of assistance. It is your hobby and we would like to keep it that way.

For more information, contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor, just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page. If you are addressing e-mail to the office, please do so at vk2wi@ozemail.com.au.

There'll be more to report next month but, if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777 or by e-mail to dthom@penrithcity.nsw.gov.au.

David Thompson VK2NH

VK5 and VK8 Notes

Last month I advised that there had been insufficient nominations to require an election as part of the annual process. This is a situation which seems to have existed over a period of some years. I do not know whether it is as a result of each council in turn carrying out a satisfactory job or whether it is because members are merely complacent.

One thing I do know is that it is not a good thing for any organisation to constantly encounter. I also note that this situation is not confined to the VK5 Division. It seems generally that it has been, for many years, the same people who figure in office in most of the Divisions. New blood should certainly be welcome, and undoubtedly necessary, in most areas of the WIA both on a state and federal basis.

The result in VK5 was that at the Divisional Annual General Meeting (AGM) it was decided by the members that further nominations should be called for. An interim "caretaker" committee comprising those who were to continue on council, either due to having been elected for the normal two year term, or there as ex-officio members, would be kept in place for the time being.

This group, on this interim basis, will continue to ensure that Divisional matters are properly seen to. I can assure you that the business of the Division will be taken care of in a responsible manner. All those previous members of council have indicated their willingness to serve again on Council and their aid has been enlisted to make certain that the workload is still suitably spread.

As a result of arrangements made to carry out the wishes of the members, as expressed at the AGM, a requisition for a Special General Meeting has been received. This

meeting is to be held on the same evening as the June General meeting of the Division and will undoubtedly serve to rectify the situation which has occurred. It may well be that this "hiccup" in the system could result in some new nominations being received rather than us exist with exactly the same faces as previously.

Information regarding the actions taken is provided in more detail in the June issue of the *South Australian Divisional Journal* which will be received by members as an insert with this June 1998 issue of *Amateur Radio*.

Divisional President's Annual Report

The content of the annual report from the President will appear, as an edited version to conserve space, in the June issue of the *Journal*. Colwyn Low VK5UE must be commended for his efforts in production of the *Journal*. Details of the report were also placed on the packet radio network addressed to VKNET.

Clubs' Convention

Vice-President Jim McLachlan, who also holds the portfolio as Clubs Liaison Officer, has been busy contacting the various affiliated radio clubs within the Division with regard to the forthcoming Clubs' Convention. This activity is to be held during the month of June. It is hoped that a good attendance by club representatives will contribute to a better understanding as to the views of amateur radio operators generally throughout the Division.

In giving some reasonable thought to such matters, one cannot help becoming aware of the fact that the opinions of all amateur radio operators, both members and non-members are of importance.

The way in which the clubs interact with the Division is such that opinion is certainly influenced by the views of non-WIA members who belong to the clubs.

This fact is of importance and needs to be recognised by all as, when the authorities approach the WIA in connection with amateur radio matters, they regard the WIA as being representative of ALL amateurs in Australia, members and non-WIA members alike. There are those who are not prepared or happy to accept this view; however, it is a fact of life and is unlikely to change.

That this is a fact is recognised by the VK5 Division. The Council, being aware of this, has taken its responsibility seriously knowing that as it makes decisions these decisions will have an effect on amateur radio as a whole. One would hope that office bearers in other areas of the WIA would have the same realisation.

Meeting Program

At present, arrangements are in hand for the meeting program for the coming months. This aspect of our activities is one where members may be able to help.

If you have any ideas for subjects for our meetings, or can suggest suitable speakers, we would be pleased to hear from you. It is expected that amongst the subjects to be covered will be talks on antenna design and testing, erection and dismantling of towers, telemetry of animals and DXpeditions. The speakers in each case are all very knowledgeable in their respective fields.

We will also be having our usual popular "Buy-and-Sell" evenings. We look forward to seeing as many members as possible at these meetings.

Ian Hunt VK5QX

VK6 Notes

God day once again! After giving Chris (the other one) a scare that I wasn't going to be around to write the VK6 Notes this month, I finally made it back to civilisation from the wilds of Victoria. Time is short, hence most of the following is drawn from the minutes of the WIA and WARG meetings. By the way, why not email me at vk6kch@amsat.org with a copy of your club's minutes; that way a friendly Chris can give your club's activities a bit of exposure in this column too.

Fee Rise?

There's movement at the station, for word has got around, that a fee increase (we regret) has got away (best I could do at 1 am). Some of you may have heard rumours of a modest fee increase. To quote from a senior official, "Council discussed the implications of a Federal motion regarding a possible increase in membership fees. Since the Council meeting, discussions have taken place among the new Directors and as a result VK6 will be moving for rescinding of the Federal motion. If successful, this would leave fees unchanged."

By the time you read this, it is hoped that the situation is decided one way or the other. Stay tuned to your weekly WIA broadcast.

No Gate

Will VK6UU had a great idea to build a fixed-frequency HF gateway, allowing amateurs on 2 m to have access to 7 MHz (full-calls only!). An application for such a beastly has just been rejected by the ACA, who cited two reasons:

- A claim that the WIA had a policy of "no repeaters below 29 MHz"; and
- The ACA will not approve a repeater transmitter being active without a signal on the input (whereas the simplest system simply

retransmits ambient noise from HF out on the 2 m port continuously).

These HF gateways are very common-place in the US (where technical innovation is rewarded, not repressed), and will be welcomed by the ageing amateur population as they lose quality access to HF upon moving into a retirement village, etc. A rearranged proposal is to be prepared for submission via the WIA Liaison Committee and the WIA VK6 Division.

Easier Access to Amateur Licences

Will VK6UU has a draft proposal for an examination free licence for consideration at the next meeting. This is essentially in-line with the idea I proposed in an earlier 'VK6 Notes', a digital-only, 70 cm-and-up licence to attract 'computer head' kids into the hobby (by the way, the cheapest licence-free devices I can find in Australia are about \$600 each, and just happen to use AX.25 anyway, although the physical layer is frequency-hopping spread-spectrum, in the amateur/ISM 2.4 GHz band).

On a similar note, Wally VK6KZ is trying to collate a list of technical qualifications and/or operator certificates of proficiency which could form the basis of exemptions from some or all of the amateur exams (in case you weren't aware, it's already possible for people with the right qualifications to be issued with an amateur licence without sitting a single amateur exam). If you know of a qualification which should be included, drop me an e-mail, and I'll pass it onto Wally.

Search for Home

Keith VK6XH has been asked by the WIA to contact all metro clubs and groups with a view to collating their views on establishing a communal meeting place for all clubs, the Institute and the radio sections of the Scouts and Guides.

Keith writes: "As discussed at the Conference of Clubs and referred to on the WIA news service, the site of Whiteman Park has been proposed. I would like to hear your opinions on this proposal and whether you have an alternative site in mind. Access would be required 24 hours a day and the building would have to be big enough for each member group to have its own room as well as a meeting room. Space for possibly two towers would be needed, and the area would preferably be RF quiet. So far, the NCRG, and Scouts and Guides have expressed an interest in the principal of a common site; now it is your time to give your groups' opinions. I would appreciate a reply even if it is a negative one. I can be reached at vk6wia@faroc.com.au. I look forward to your response. 73 de VK6XH".

So, do you want a club room? If so, do you want it at Whiteman Park? If you're not sure where that is, it's bounded by Grangara, Beechboro, Marshall and Lord streets, approx 17 km NE of Perth GPO. If it goes ahead, it'll be quite a major investment, so now is the time to have your say!

WARG News

* The VK6RAP 6 metre repeater is back in service at Roleystone.

* The CTCSS encoder for the news relay had its level increased on VK6RUF.

* A 50 watt UHF Power Amp has been donated to the group by VK6ZRY for use on VK6RUF.

* The VK6RMW Mt William site was inspected (by VK6LZ Cliff, VK6ZLZ Christine, VK6TRC Rob, VK6KG Kevin, VK6MM Mac and VK6AFA John) recently, to determine the cause of noise and desensing problems which had been affecting the VK6WIA News Relay system. A noisy guy connection was corrected but it appears the duplexer needs realignment and a further visit will be required.

* The WARG AGM saw a change of officer holders, although there were no nominations for Technical/Equipment Officer or Councillor/Digital Co-Ordinator. Any volunteers?

Other Bits

* The valve bank has been collected by the new custodian, Clarrie VK6JAS.

* Need a book? Buy one from the WIA Bookshop! Contact Roy VK6XV on 08 9246 3642, before his bookshelf breaks.

* Don VK6HK advises that Sid Smith VK6SJ, a foundation and Life member of the WA VHF Group, has become a Silent Key.

* As it has been impossible to achieve a quorum at General Meetings for some time, it was agreed that the May 1998 VK6 WIA General Meeting would be the last. This will provide significant savings which can be used to support other services of the Division. If there is demand, then a quarterly weekend afternoon meeting may be tried.

Chris Hill VK6KCH

"QRM" News — VK7 Notes

I am allowing myself a little indulgence at the start of this report to put in writing the things I, as President, want to see happen in the Tasmanian Division.

I feel that we have all become a bit too serious about our amateur radio. It's supposed to be a hobby - plenty of fun and fellowship with like-interest people all over our world. We don't see much of that in lots of areas of our hobby at the moment. Divisions and

members picking at each other over things that, if we stood back and examined them, are nothing to do with "Fun and Fellowship" - just one-up-man-ship!

This, my second year, is going to see a return to what amateur radio should be, especially in our Island State. I want to see our families much more involved. We don't hear much about our lady amateurs - can we get ALARA going more here. We've had 20-30 new and rejoined members in the last few months; it is up to every "old" member to make these people feel at home and wanted. Let's put the "hobby" back into amateur radio.

Our first Divisional meeting was held in Hobart on Saturday, 2 March. No earth-shattering news from it. Our first full meeting followed the AGM. We appointed a Web-site co-ordinator, Robert VK7RB. Look for our Web-site at <http://www.wia.tasnet.net>. We hope to have weekly upgrades of Tassie news.

There was standing room only at the Southern branch meeting on Wednesday, 6 May. The guest speaker was John Coles from the Hydro with an illustrated talk on their new 'you-beaut' communications system. After two hours he was allowed to stop answering questions and we proceeded with a necessarily fairly short meeting. The June meeting is a visit to the ACA's top-security listening station at Quoin Ridge.

Continuing the "fun and fellowship" theme, the Northern branch held a tea meeting at a local restaurant for hams and their families. A great success. We don't really need a full business meeting EVERY month.

The Northwest branch is applying for IOTA status for King Island. Flinders is already there, but King - no! Strange?

Ron Churcher VK7RN

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Stolen Equipment

John Tower from Tower Communications at 443 Albany Highway, Victoria Park, WA reports the following equipment stolen during a burglary on 7 May 1998:

- * Revex W200 SWR/Power meter
- * Revex W500 SWR/Power meter
- * IC-706 Mk II, s/n 001170
- * UT-106 DSP unit for IC-706
- * Yaesu FT-290R, second hand
- * IC-M10A marine handheld, second hand
- * 4 x Uniden UH-053 UHF CB handhelds with speaker mics and drop in chargers, s/n's DI753, D2025, D1820, and D1811.

If you have any information about any of this stolen equipment, please contact John on 08 9470 1118, fax 08 9472 3795.

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Club News

Fisher's Ghost Amateur Radio Club

Last year Fisher's Ghost Amateur Radio Club held a special event in memory of Arthur Harris. The participants were to receive an award for contacting the Club station on 80 metres.

Unfortunately, due to problems beyond our control, some records have been lost and therefore some certificates have not been sent. If anyone feels they are entitled to an award could they please contact the Club by writing to: Fisher's Ghost ARC Inc, PO Box 35N, North Campbelltown NSW 2560.

If they can supply any information about the time of the QSO, and the method of payment, etc this will help speed up the process of getting the Awards out. The Club would like to apologise for any inconvenience caused.

Cbris VK2ZCJ
Publicity Officer

Liverpool and District Amateur Radio Club Inc

Liverpool Club Auction

The LARDC will be holding their annual auction at the Scout Camp, Cambridge Avenue, Glenfield commencing at 11 am on Saturday, 18 July 1998.

Our auctioneer, Dave VK2KLV, will again be master of ceremonies. If a ham "can ham it up" as an auctioneer, Dave certainly tops the bill. Come along and join in the fun. A sausage sizzle, tea and coffee, as well as cool drinks will be available.

Don't forget your discarded gear to auction. And, most important, don't forget your money as the club needs the profits to pay for our repeater upgrades.

Garry Barker VK2TSR
Honorary Secretary
LARDC

Twin Cities Radio and Electronics Club Inc

Our Amateur Radio Hamfest will be held on the weekend of 8 and 9 August 1998 at the Murray High School, corner of Kaitler's Road and Kemp Street, North Albury.

It will commence on the Saturday from midday. Tea, coffee and biscuits will be available on arrival. If sufficient interest is shown, a live foxhunt will be held in the middle of the afternoon as a means of introducing visitors to the area.

On the Saturday evening a dinner will be held at the Commercial Club in Albury with two guest speakers for your entertainment. The cost for the dinner is the same as last time at \$25-00, with drinks at bar prices. Bookings and payments are to be confirmed by 29 July 1998.

On Sunday the doors to the hall will be opened at 0930. There will be talks and demonstrations on packet radio, SSTV and Internet usage. A talk-in will be available on the VK3RWE repeaters on 147.00 and 439.425 MHz, and simplex 146.500 MHz.

Tempting shack additions will be available from commercial and second-hand dealers, and tables are available at \$5.00 per 2.5 metres, or 8 feet. Hot and cold drinks and food will be available all Sunday.

Come along and make it a great weekend.

For further information or assistance, please contact the Club at PO Box 396, Albury NSW 2640, or phone Greg Sargent on 02 6021 1741 (BH) or 02 6021 5438 (AH).

Fred Armstrong VK3XLV
Committee Member

Radio Amateurs Old Timers Club

Subscription Renewals

At a committee meeting in March it was decided to change our financial year to 1 April/31 March instead of 1 July/30 June as in the past.

This was notified to members in a paragraph on the inside front cover of the March 1998 issue of *OTN*. The reason was so that payment became due within two or three weeks of receipt of the renewal notice in the magazine, instead of three months later when it could easily be forgotten.

It worked very well for almost 90% of our members but, as at 1 May, about 70 people have not paid up, probably because they are still thinking of 1 July.

Our Secretary/Treasurer Arthur Evans VK3VQ requests that you check your records to make sure you are not on the list of those we have not heard from yet.
Allan Doble VK3AMD

Redcliffe and District Radio Club Inc

The Annual General Meeting of the Redcliffe and District Radio Club Inc will be held at the Deception Bay State High School administration block on Monday, 15 June 1998 commencing at 7.30 pm.

Nominations for all executive positions are welcome. Nominations should be sent to the Secretary prior to the meeting, but nominations will be accepted from the floor.

Members are reminded club subscriptions are due on the 1 June.

The Club spent a very enjoyable weekend contesting the John Moyle Field Day from the Beachmere Sports Centre about 50 km north of Brisbane. Club station VK4IZ was operational on 80-10 m and Club station VK4RC was operational on 2 and 6 m. AC power was provided by three 5 kVA generator sets donated for the weekend by Coates Hire. Antennas of all shapes and sizes were strung up and some very interesting operating positions were assumed. A great time was had by all who attended. Many thanks to all stations who worked VK4RC and VK4IZ, and those who visited the station during the contest.

The Redcliffe Club Web site is up and running with all the Club information. Please visit us at <http://www.st.net.au/~vk4vw/rdrc/> or check into our Sunday net at 7.30 pm on 3.612 MHz +/- QRM.

Peter Dawson VK4VW

WIA (VIC) Eastern Zone Radio Club

Gippsland Technical Conference

The WIA (VIC) Eastern Zone Radio Club is planning to conduct a technical conference relating to amateur radio on the weekend of Saturday, 11 July and Sunday, 12 July 1998.

The conference theme is that of weak signal VHF, UHF and microwave communications. However, any topic related to amateur radio, or technical advancement in the field of communications that may be of interest to amateurs, will be considered by the organising committee.

Possible topics for discussion include: equipment for microwave bands; propagation at VHF, UHF and microwaves; and antennas for VHF, UHF and microwaves.

Sessions can be tailored to the presenter's requirements. Lecture theatres with video projection facilities will be available. It would be appreciated if presenters could submit their paper prior to the event to facilitate the production of the Proceedings volume.

The conference will be held at the Gippsland Campus of Monash University, located in Churchill in the Latrobe Valley, approximately 170 km east of Melbourne. Travel time from Melbourne central is typically less than two hours, on dual carriageway, freeway standard highway for most of the trip. Transport from Morwell or Traralgon rail stations, or the Latrobe Valley airfield, can be arranged with prior notice.

Conference registration costs have not yet been set. It is planned to publish the papers presented as a stand alone volume of Proceedings. It is anticipated that registration will be in the order of \$20-30 per person, including a copy of the Proceedings. Current planning includes an optional Conference Dinner on Saturday evening at a local restaurant, the cost of which will be additional to the Registration fee. Accommodation in single rooms can be arranged at \$20 per person per night, bed linen to be provided by the attending person/s. Alternatively, the Organising Committee can provide details of other local accommodation.

Current planning is for the Conference to commence at 1300 hrs on Saturday. The detailed program will be developed once expressions of interest confirm adequate interest. If there is sufficient interest, it may be possible to arrange a tour of some of the local industrial sites on Sunday, eg Loy Yang Power Station, or visitors may choose to explore some of the other local attractions, such as the Gourmet Deli trail.

Any person interested in attending, either as a presenter or as a "listener", should contact the Organising Committee as soon as possible.

Peter Freeman VK3KAI

PO Box 273, Churchill VIC 3842

03 9902 6416 (W) 019 388 044

peter.freeman@sci.monash.edu.au

VK3KAI@VK3BVP.#SEV.VIC.AUS.OC

Ralph Edgar VK3WRE

03 5174 0987

VK3WRE@VK3BVP.#SEV.VIC.AUS.OC

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98:08:09, 98:08:10, 98:08:11 and 98:08:12 were, on legal advice obtained by the President, all out of order.

Subsequently all were withdrawn by VK2 except 98:08:10 which required the President to rule it out of order.

The so-called suspension of the Editor because of his publishing of letters in the February issue of *Amateur Radio* thought to be inappropriate, are the Editor's words entirely.

The reasons for having a Guest Editor were never given verbally or in writing to the Editor.

Secondly, the unavailability of the auditor's report caused the President to adjourn the meeting sine die. The delegates did not vote to adjourn the meeting to a date to be fixed.

Neil Penfold VK6NE

Director WIA

May Editorial

I wish to protest at the direction and content of AR magazine's editorial comment, since guest editorials were ushered in.

The May editorial, suggesting that VHF activity was founded by the arrival of surplus car-phones, which if anything, have been an anathema to true VHF work, is insulting to VHF experimenters, or at least, historically inaccurate.

Ross Hull, an internationally famous Australian VHF man, cemented his experiments and records in the history books, long before any taxi radios were on the drawing board, let alone placed on the surplus market. The early days of 52 MHz AM, some exotic bands to which we no longer have access, and of course the 144 and 432 MHz bands, all saw outstanding home-brew pioneer work.

To further suggest that the availability of synthesised, channelised radios is some sort of revolution is a clear indication of the author's deficient knowledge of the wide and diverse range of exciting activities on hand.

VHF operators, in the main, totally eschew repeaters, FM, etc. To link the terms VHF experimentation and FM is the epitome of an antithesis.

This style of editorial might suit the local newspaper but we deserve an editorial that is at least thoroughly researched.

I dread the thought that such content might be the basis upon which a newcomer assesses our hobby.

Christopher Davis VK1DO

123 Hawkesbury Crescent

Farrer ACT 2607

cdavis@spirit.com.au

(May issue contained the last of the editorials to be written by the Guest Editor. Ed)

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Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

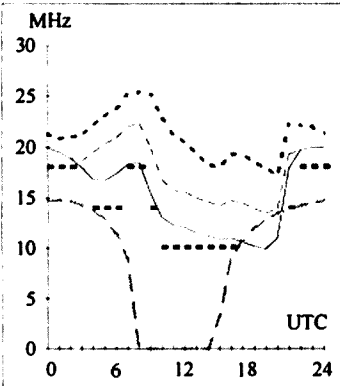
Changes at the AGM

There were some errors in the reporting of the AGM held last March, and printed on page 3 of *Amateur Radio* for May 1998.

Firstly, the proceedings of the Federal Council in relation to the Editor. The motions from VK2, namely 98:08:07, 98:08:08;

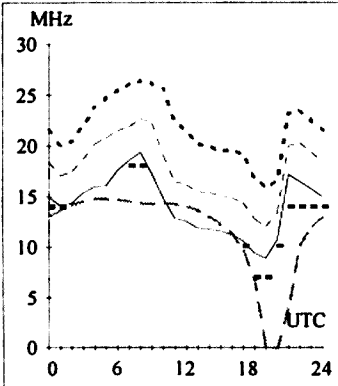
Adelaide-Anchorage 38

First F 0-5 Short 12466 km



Brisbane-Berne 315

First F 0-5 Short 16231 km



HF Predictions

Evan Jarman VK3ANI

T Index: 73



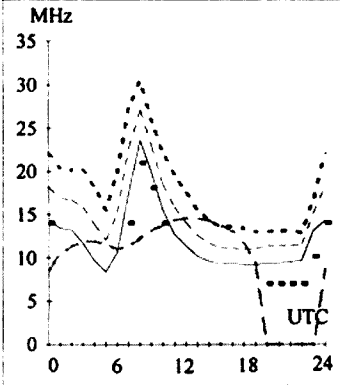
These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication. The frequencies, identified in the legend, are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

The predictions were made with the Ionospheric Prediction Service program, ASAPS v3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

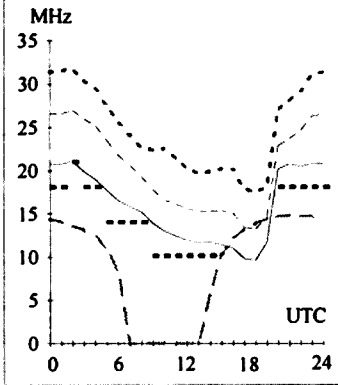
Adelaide-Dakar 233

First F 0-5 Short 16725 km



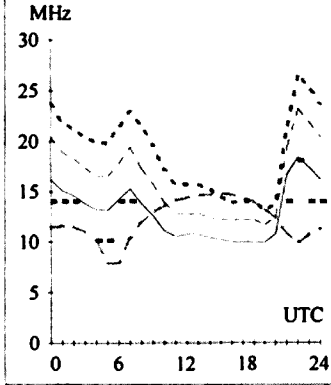
Brisbane-Los Angeles 59

Second 4F3-7 4E0 Short 11563 km



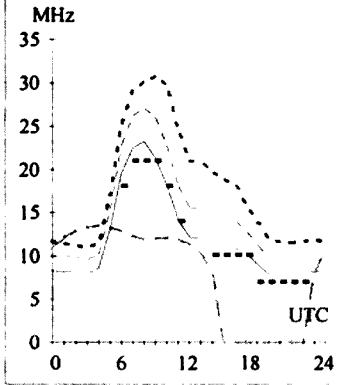
Canberra-London 136

First F 0-5 Long 23042 km



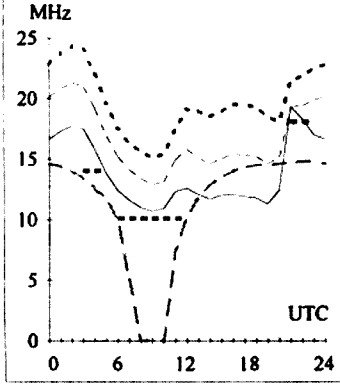
Darwin-Capetown 231

Second 4F3-4 4E0 Short 11220 km



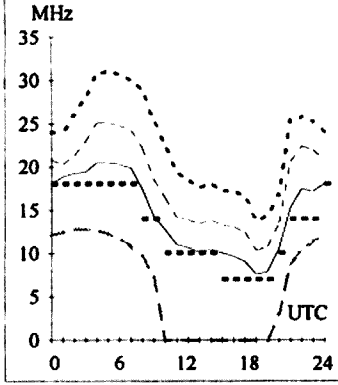
Adelaide-Ottawa 58

First F 0-5 Short 16901 km



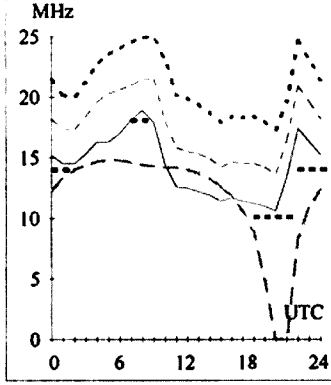
Brisbane-Osaka 344

Second 3F6-11 3E0 Short 7149 km



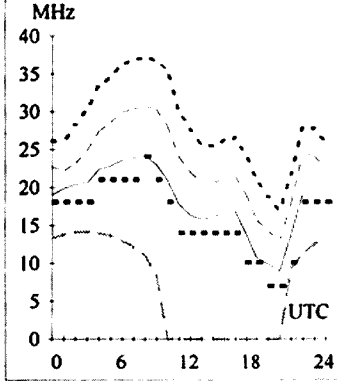
Canberra-London 316

First F 0-5 Short 16982 km



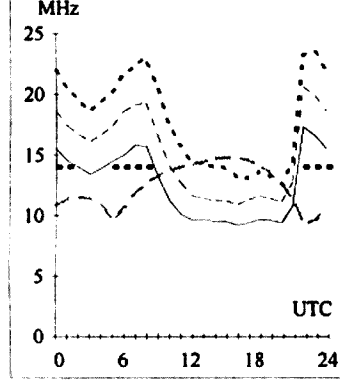
Darwin-Tokyo 10

First 2F4-8 2E0 Short 5437 km



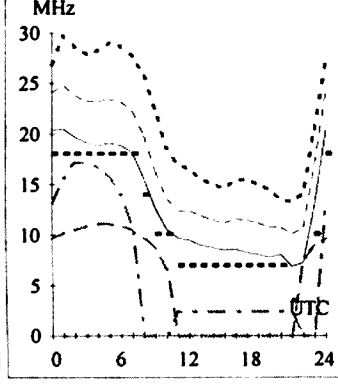
Adelaide-Stockholm 142

First F 0-5 Long 25030 km



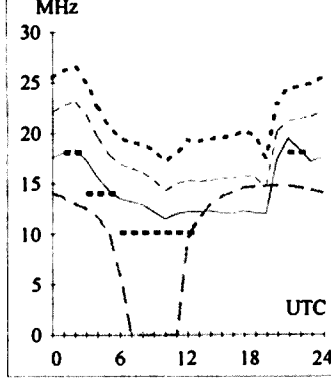
Brisbane-Singapore 293

Second 3F8-11 3E0 Short 6147 km



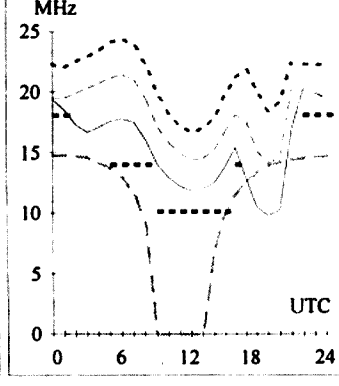
Canberra-Washington 70

First F 0-5 Short 15939 km



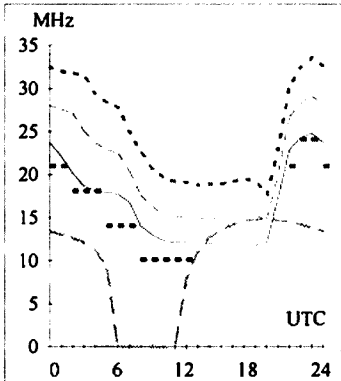
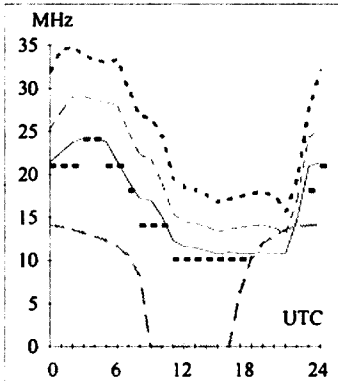
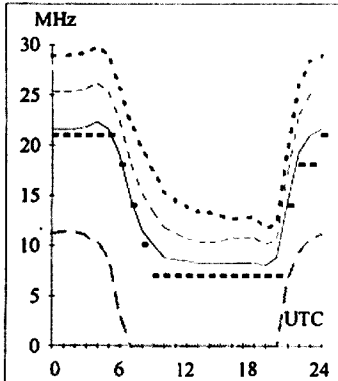
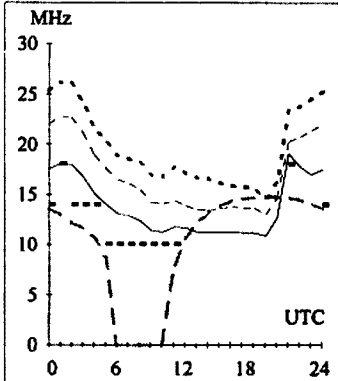
Darwin-Vancouver 42

First F 0-5 Short 12213 km



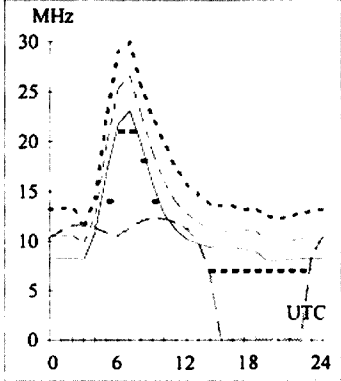
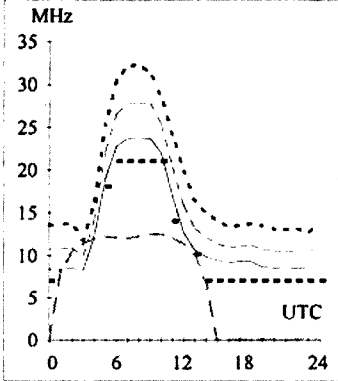
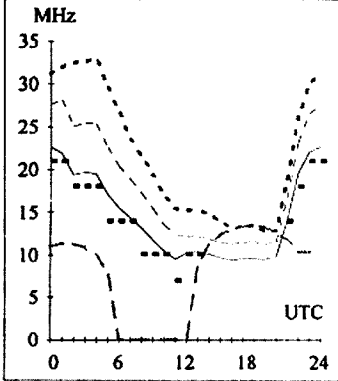
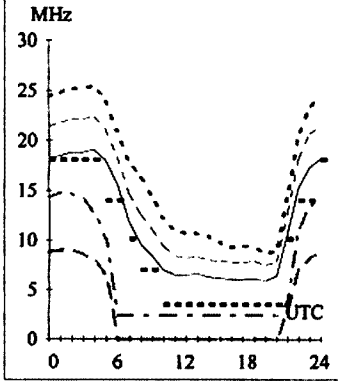
Hobart-Boston 78 **Melbourne-Auckland** 97 **Perth-Honolulu** 70 **Sydney-Miami** 86

First F 0-5 Short 16895 km First 1F4-5 1E0 Short 2623 km Second 4F4-7 4E0 Short 10906 km First F 0-5 Short 40024 km



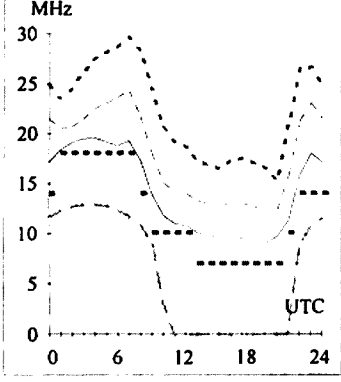
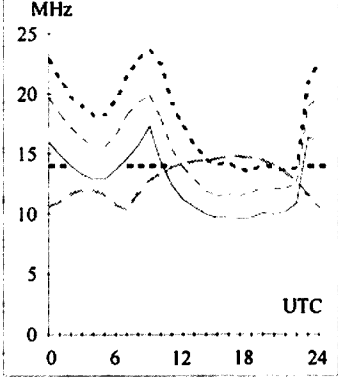
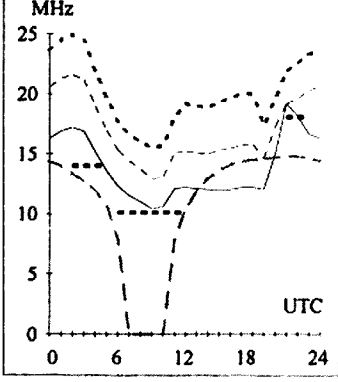
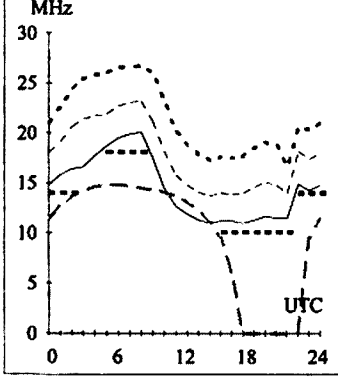
Hobart-Christchurch 101 **Melbourne-Lima** 133 **Perth-Johannesburg** 248 **Sydney-Pretoria** 230

First 1F8-9 1E0 Short 2040 km First F 0-5 Short 12950 km First 3F3-4 3E0 Short 8315 km Second 4F3-4 4E0 Short 11063 km



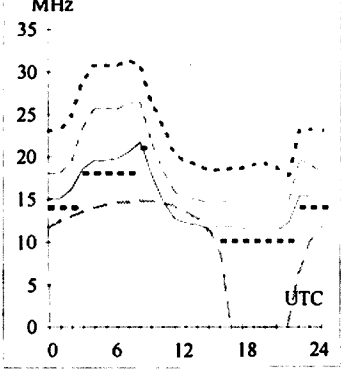
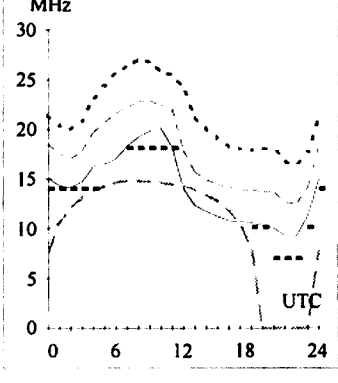
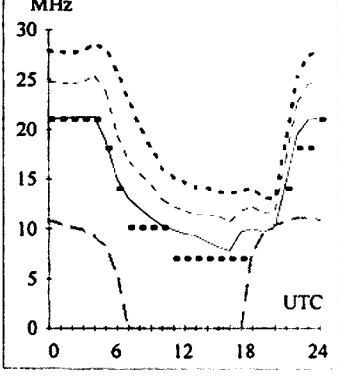
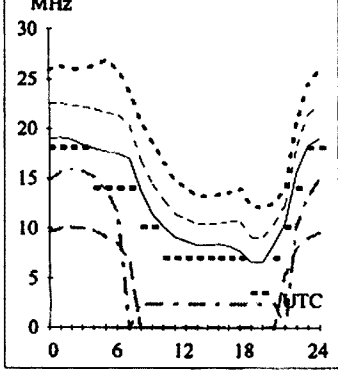
Hobart-Moscow 312 **Melbourne-Montreal** 62 **Perth-London** 133 **Sydney-Taipei** 330

First F 0-5 Short 14963 km First F 0-5 Short 16733 km First F 0-5 Long 25543 km Second 3F6-10 3E0 Short 7261 km



Hobart-Port Moresby 0 **Melbourne-Papeete** 98 **Perth-London** 313 **Sydney-Tel Aviv** 287

Second 2F10-12 2E1 Short 3711 km Second 3F7-8 3E0 Short 6687 km First F 0-5 Short 14481 km First F 0-5 Short 14173 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment. WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194
Fax: 03 9584 8928
E-mail: vk3br@o3i.aone.net.au

TRADE ADS

● **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.

● **WEATHER FAX programs for IBM XT/ATs** *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage.

ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.

● **HAMLOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples...AR: "Recommend it to anyone". The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAMLOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+\$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02 369 2008 BH, fax 02 369 3069. Internet address rhg@ozemail.com.au.

FOR SALE NSW

● Deceased estate of Hans VK2AOU: Yaesu YO-901 Multiscope, Yaesu FT-901DM txcvr, \$800 ONO. Daiwa CS-201 antenna switch, \$40. Daiwa CN-250 crossed needles power meter, \$50. 16 m craak-up mast, three section, tilt-over, with Kenpro KR-400 rotator,

\$900 ONO. Kenpro KR-500 elevation rotator, \$250 ONO. Lugamo, 02 9153 0621.

● **SATFAX decoder board and software**, great for older PCs to receive satellite pictures, \$60. Multi-7 2 m FM txcvr, \$80. HAPN packet board, \$35. HP DeskJet 520 printer, VG condn, \$120. Star LC10 II dot matrix printer, \$70. Yaesu FT-747GX with FM and narrow filters, \$850. H H Leykam VK2HL, QTHR, 02 9971 9795.

● **Icom 02A 2 m handheld**, manual, extra batteries and antennas, will arrange COD delivery, \$200. RC Wishart VK2BRW, 07 5524 3722.

● **DRSI card**, 2 ports with manual and drivers, \$150. Tiny 2, \$150. FM-828s on 147.575, 145.050, \$40 each. FM-900, voice and packet, \$100. Plessey 70 cm rig, \$130. FM-747 70 cm packet, \$50. Alinco DR-112 2 m, \$300. Azden PCS-4000 2 m, \$180. Light duty Stolle rotator, \$120. E J Virtue VK2EJV, 02 6689 5137 (BH), 02 6689 5040 (AH), e-mail: evirtue@nor.com.au All can be COD Australia Post.

● **Kenwood TS-50S HF txcvr**, as new, \$985. Uniden 2510 10 m mobile, \$275. Uniden Sundowner UHF CB txcvr, \$190. Yaesu FT-26 2 m h/held, \$190. Urgent sale! R E Taylor VK2AOE, QTHR, 02 9449 6364.

● **Yaesu CPU-2500R 2 m txcvr**, VGC, \$350. Yaesu FT-747 txcvr, good condn, \$750. Yaesu FT-290RH 2 m txcvr, charger, car adapter, speaker/mic, VGC, \$350. Yaesu FV-901 external VFO, \$200. KW-1000 dummy load, good condn, \$125. Hi-Mound telegraph key, paddle, never used, \$100. Peter VK2DBI, QTHR, 02 6367 5095.

● **Ameritron AL811H linear amplifier**, 800 watts PEP, 160 to 10 metres, export model, s/n 17651X, 4 by 811A tubes, still in carton, never used, \$1600. Brian VK2FG, QTHR, 02 4991 4145.

● **TH6DXX 6 element triband beam**, in good mechanical condn, \$249. 18 m (60 ft) three section Hills galvanised wind up tower with guys and tumbuckles, \$399. Beam and tower dismantled Sydney and reasonable delivery arranged. Shack clearance! Icom IC-720A HF 12 V mobile txcvr, 100 W Tx, general coverage 100 kHz - 30 MHz, \$295 (works but mechanically damaged front panel). DC PSUs, various

to 10 A. 386 IBM clone computer, \$200. Epson NX15 9 pin printer, up to 14 inch wide, \$95. PK232MBX packet/Wefax modem, \$95. HF Rx USB/LSB, 100 kHz to 30 MHz, \$225. Marine 27 MHz AM Tx/Rx and antenna, \$50. Bench drill, 5 speed, 10 mm, \$55. AT-120 mobile ATU, 80-10 m, \$55. Ted VK2EZQ, QTHR, 019 460 437.

● **QTH**, with Council permission for 60 ft tower, 3 bedroom brick veneer on flat block, walk Asquith station near Hornsby, block also has DA for subdivision; invest for the future, new house, north aspect, high side of street, good DX position on ridge, no power lines, new sunspot cycle coming. Ted VK2EZQ, QTHR, 019 460 437.

● **Yaesu FT-23R**, \$200. FT-200, \$180. Icom IC22A, \$100. Philips FM828/25, \$50. AR1000XLT scanner, \$400. Realistic PR30 scanner, \$50. Amstrad 386 computer and Canon laser printer, \$500. Stuart VK2YCS, 02 9499 2484 (AH), 02 9353 4158 (BH).

● **Collins S-line**, consisting of 75S3B, 32S3 and 516F2, \$900. Tom VK2OE, 02 4646 1024 (AH).

● **Kenwood TS-830S**, s/n 1041993, with remote VFO-240, service manuals, two sets spare finals and drivers, MC-50 mic, Daiwa DK210 keyer and Bencher twin paddle, all VGC, \$1000 the lot. Kevin VK2JIS, QTHR, 02 9144 3279, fax 02 9144 2841.

● **Radio and Hobbies magazines**, Vol 2 - 18, complete and bound, plus loose copies 1961 to 1977, some missing, offers, more than \$100 wanted for the lot. David VK2COF, PO Box 2092, Bowral NSW 2576.

FOR SALE VIC

● Deceased Estate Werner VK3WOH. Antenna mast, 2 sections, 6 m, triangular base and winch, bottom hinged, plus 6 m telescopic mast, \$90. Kenwood TS-140S, \$1000. Kantronics PC3, \$150. 386 computer and printer, \$350. Station Master antenna, \$20. Crown rotator, \$10. Micron LCD multimeter 22-188, \$25. Regency SWR-2 SWR meter, \$20. Icom IC-2A, s/n 04812, \$120. Contact Helmut VK3CHN, QTHR, 03 9744 2064.

● Sale due to increasing deafness. Kenwood TS-43X (TS-430); s/n 4071759, matching PSU, s/n 5020583; Hustler 5-band vertical, all bought new and are unmodified, in good order, \$1000 ONO. Jack VK3BJP, QTHR, 03 5275 1555.

● **HF linear amplifier**, 2 x RS1007 (4-125A) in GG-80, 40, 20, 15 and 10 m, HV PSU, cables plus spare finals, \$250. Trevor VK3HG, QTHR, 03 5829 0058.

● Sale of complete station of VK3COF because of terminal illness: 19 m tower, wind-up, tilting, extra guys, Nally Tower computations, with coax cables and VHF antenna, \$500. Werner Wulf 3 el 3 band Yagi, \$300. Daiwa rotator, control unit, cables, \$400. Kenwood TS-430S, \$900. Kenwood 25 A PSU, \$200. Kenwood 520 speaker, \$40. Kenwood AT-200 ATU, \$200. Electronic CW paddle, \$40. Kenwood MC60 desk mike, \$75. Kenwood TR-8300 UHF txcvr, \$175. Kenwood TR-3200 UHF txcvr, \$90. Icom IC-290H all mode VHF txcvr, \$400. Icom IC-2A VHF txcvr, \$90. 13.8 V/7 A homebrew PSU, \$25. Jaycar QMI310 digital meter, \$20. Analogue V-A-Ohm meter (scale 10 by 5 cm), \$15. SML SWR-15 meter, \$25. ME11X SWR meter, \$40. Yaesu FL-2100B linear amplifier, \$650. TRIO CO-1303D sweep-gen/oscilloscope, \$200. Sanyo "Campanette" 30 kHz-30 MHz, port, \$40. DSE soldering station, \$25. Battery packs, Nicads, lead acid, etc from \$5. Several power plug packs, from \$5. Battery chargers (nicads), \$20.

A&R Battery Eliminator, 4.5-6-7.5 V 0.5 A, \$15. **Noise Bridge**, \$8. "Archer" head phones, \$10. **Vintage studio mic** on table stand, \$35. **Studio mic**, dynamic, on stand on casters \$40. Lots of coax switches, plugs, cables, UHF and VHF antennas, etc, best offers. Enquiries to Harry VK3AXJ, 03 9802 5704.

● **Icom IC-725**, all HF bands, all modes, CW filter, mic, manual, s/n 003152, in carton, VGC, \$950. **Kenwood TM-731A** 2 m/70 cm, 5-40 W FM, mic, manual, s/n 0062783, VGC, \$375. **Daiwa CN630** cross-needle SWR/power meter, 144-450 MHz, 20-200 W, as new in carton, \$75. **Cushcraft 6 m Ringo**, as new, \$75. Andy VK3UJ, QTHR, 03 9726 8879.

● **Icom IC-735 HF txcvr**, mic, manual, service book, excellent condn, \$790. Alan VK3AMT, 03 9789 9106.

● **Grundig GDO Model 701**, 1.7 MHz-250 MHz, s/n 3350, \$100. **Leader Signal Generator**, 120 kHz-350 MHz, \$50. **SCR221-AK Frequency Meter**, 125 kHz-200 MHz, s/n 3131, complete with calibration charts, VGC, \$30. **CRO Type M/D32**, with manual and spare PSU, offer. **Mosley TA33 20/15/10 beam**, has been in storage for the last 20 odd years, with rigging details and ops data, \$100. **Advance Signal Generator**, 2-190 MHz, s/n 191, \$30. **Command Tx**, unmodified, offer. **Class C Wavemeter**, offer. **MN Compass receiver**, modified, free. **Large quantity of ARs**, free. **SCR522**, unmodified, free. **Vinton txcvrs**, modified to 2 m, free. **70 MHz base station**, unmodified, free. Quantity of old gear suitable for your junk box, free. Disposal due to ill-health. Peter VK3XK, QTHR, 03 9583 2895.

● **Geloso VFO 4/104**. BC348R con AC 5244 CDL 11414 WF43. W Daniel VK3NX, QTHR, 03 5398 1734.

● **Command receivers**, 190-550 kHz and 6-9.1 MHz, VGC, no mods, no holes, \$150 each with dynamotor. **Surplus Radio Conversion manuals**, vol 1, 2 and 3, by **Evenson and Beach**; also **Surplus Schematics Handbook**, \$100 the lot. Peter VK3JZ, QTHR, 03 5156 2053, jupiter@net-tech.com.au

● **Cushcraft R7 7-band vertical antenna**, covers 10, 12, 15, 17, 20, 30 and 40 m, EC. Geoff VK3KB, 03 9802 0441.

● **Estate of the late Stan VK3TE**. **IC-2SAT handheld 2 m txcvr**, with handbook and charger, little used and in original packing, \$255 ONO. **IC-207H UHF/VHF FM txcvr**, only a few months old, complete in original packing with handbook, \$690 ONO. **13.6 V, 20 A continuous PSU** for the IC-207H above, very sturdy, \$225 ONO. Harold, QTHR, 03 9596 2414 anytime.

● **Kenwood 701A 144/430 MHz 25 watt FM txcvr**, \$375. **Icom IC-229H 50 watt 2 m FM txcvr**, \$300. **Kenwood TR-7950 50 watt 2 m FM txcvr**, \$250. **Yaesu FT-23R 2 m hand-held**, \$125. **13.8 V, 12 A PSU**, \$80. **Swan 350 SSB txcvr**, complete, \$200. **Kenwood TS-430**, FM board, AM filter, \$725. Ron VK3OM, QTHR, 03 5944 3019.

● **Yaesu FT-101**, s/n 1H110409, with FV-101 VFO, s/n 1E276. **HAMEG HM205-2 20 MHz dual beam storage CRO**, \$200. **Emotator 502GAX rotator**, \$200. **Security system**, 2 cameras, monitor, \$70. **TH6DXX tri-band 4 el beam**, \$300. Keith VK3AFI, QTHR, 03 5221 3658.

FOR SALE QLD

● **LDF4-50 and LDF5-50 heliax cable**, \$3 and \$5 per metre. **Connectors** to suit both types from \$25 each for LDF4-50 and \$50 each for LDF5-50. Approx 80 m of **LDF6-50**, can supply new connectors to suit, what offers? **75 ft winch-up tower**, \$500 ONO. R G Mackie VK4SWR, 07 3348 7616 (AH).

● **Singer Gertsch FMI0C signal generator/test set**, synthesised LF to 599 MHz, mainframe and 5 plug-ins - sig gen RF output and atten and Tx monitor input, Tx freq offset meter, FM deviation meter and oscillator, 2 CROs with internal audio oscillator, one each for measuring AM and FM that double as audio CROs, good working condn, mains and ext 12 V DC operation, handbook, \$450. **Gould audio oscillator**, 10 Hz to 1 MHz in 4 ranges, sine and square wave outputs, level meter, separate balanced output, 240 V AC, portable, \$50. Gary VK4AR, 07 3353 1695.

FOR SALE SA

● **Kenwood TR-2400 2 m handheld rig**, s/n 0115168, with ST-1 base stand/mains charger, BC-5 car battery charger, **Shure handheld mic**, \$300 ONO. Jim VK5JL, QTHR, 08 8295 8094.

● **8 element log periodic**, must sell. Assorted CB and amateur gear. Send SASE for list. Paul VK5MAP, PO Box 76, Peterborough SA 5422, phone/fax 08 8651 2398.

● **Yaesu FRG-7700 rcvr**, memory fitted, manual, excellent condn, original carton, s/n 1H100275, \$400. **Yaesu FRT-7700 ATU**, s/n 21110244, \$50. **Yaesu FRV-7700 frequency converter** 118-150 MHz 50-59 MHz, s/n 1H010708, \$50. **Yaesu FRA-7700 active antenna**, s/n 3K130054, \$50. The lot, \$500. John VK5CJP, QTHR, 08 8336 5404.

FOR SALE WA

● **Kenwood TS-930S**, auto ATU, 240 V, excellent condn, \$1300 ONO. **Yaesu FT-980**, 240 V base, new final transistors just fitted, excellent condn, \$1350 ONO. Will swap one of the above for TS-50, FT-900, IC-706, DX-70, etc, cash adjustment either way possible. Talk to me! R K Bainbridge VK6XH, 08 9279 4923 evenings/weekends

● **Hills 100 ft wind-up mast**, \$500. **Yagi tri-band antenna**, \$350. **Daiwa DC-7001A rotator**, controller and cable, \$300. Offers considered. F D Morgan VK6FRE, WICEN Secretary, 08 9276 4897.

● **FT-747GX**, unused, still boxed, \$1000. **FT-23**, used, with charger. Mic/spkr, car adapter, FNB10 battery, \$150 the lot. Peter VK6EU, 0419 869 291 mobile/message bank.

● **Yaesu FT-990 HF transceiver**, immaculate condition with desk mic, original box and manuals, \$2300. 7 element 2 m crossed Yagi beam, \$60. 13.5 V @ 3 A power supply, \$40. SOTA solid state HF linear amplifier, 4 W in for 100 W out, 13.5 V operation, \$180. Trio 1 kW low-pass filter, \$40. Pair 4CX250 valves and HF bases, \$30. 1296 MHz to 144 MHz Rx converter, \$40. German Morse key, \$40. Receiver noise generator and alignment aid, \$50. Phil VK6APH, 08 9245 3973.

● **Yaesu FTV-707 UHF/VHF transverter** with 50, 144 and 430 MHz modules, all new in original boxes with manual. What offers? Merv VK6BMT, QTHR, 08 9399 2024.

● **Deceased estate VK6TP**. **Kenwood TS-950SD HF txcvr**, excellent condn. **Kenwood TL-922 HF linear**, excellent condn. **Two new Eimac 4CX250BC valves**. **Com-antenna 20/15/10 beam**, as new. **Crank-up/tilt-over mast** to 30 feet. Written offers invited. No reasonable offers refused. Merv VK6BMT, QTHR, 08 9399 2024.

FOR SALE TAS

● **Icom IC-02N 2 m h/held txcvr** with memories, scanning, tone encoder, etc. Perfect condn. \$180. Jim VK7FJ, 03 6228 3820.

● **Yaesu FRG7 rcvr**, 240 V AC, good condn, \$150 ONO. **Yaesu FT-101Z HF txcvr**, WARC bands, excellent condn, \$475 ONO. Barry VK7BE, 03 6327 2096, 0419 368 272.

WANTED NSW

● **Old heavy communications receivers**, the heavier the better! I will collect personally from the Sydney area. Wrecked or going no matter, will pay \$\$\$ for a hemia. Keen SWI, who restores the gear. Contact John Wright (02) 9533 6261.

● **Yaesu FTV-107R** or other transverter. David VK2DPD, 02 4397 2385 (AH).

● **Digital display kit for FT-101Z**. Bob VK2AVQ, QTHR, 02 9878 2359.

● **Plugins for Bird 43 Thruline wattmeter**, elements 5C, 2.5K and 25K. Guy VK2BBF, QTHR, 02 4751 6726

● **Antennas: Gap Voyager, KI.M.KT-34XA, Hy-Gain TH7DXX**. Rotators: **HAM 3, IIA M 4, Collins series 8000 system**. Valves: **3-1000**. Tom VK2OE, 02 4646 1024 (evenings).

● **Yaesu FT-101B manual and schematic**, will gladly pay postage and photocopying costs. Andrew VK2APA, 02 4961 5095, e-mail c9608721@alinga.newcastle.edu.au.

WANTED VIC

● "The Radio History of the Royal Flying Doctor Service" by John Behr, to buy or loan. **Johnson Viking 500 AM/CW transmitter**. Rodney VK3UG, QTHR, 03 5762 1454.

● **Circuit and operating instructions** for Transmission Products Pty Ltd **valve tester type 862**, all costs accepted. John VK3CJB, QTHR.

● **Yaesu FT-102 txcvr service manual**. E G Pont VK3AEP, QTHR, 03 9580 2568.

● **Circuit and manual for University Supertracer Model AST No 241**. Brian VK3WYN, QTHR, 03 9560 0918.

● **Yaesu FTV-250 2 m transverter**. **Yaesu YD148 desk mic**. **Yaesu FV-101B VFO** for FT-101E. Bill VK3HX, QTHR, 03 9807 9172.

● **Wireless Set No 11 chassis** for parts or rebuild. Clem VK3CYD, QTHR, 03 5126 2064, clem@gippstafe.vic.edu.au.

● **Manual for Revox A77 reel to reel tape recorder**, for photocopying, cost re-imbursed. Alan VK3AL, QTHR, 03 9690 1691, alanell@netlink.com.au

● **VZ200/300 RTTY module**, DSE catalogue No 6318. Bruce VK3YBW, QTHR, 03 9527 2661 after 6 pm.

WANTED QLD

● **Kenwood TS-520S power transformer**. L Schmidt VK4JZ, QTHR, 07 5485 3324.

● **Yaesu FT-101ZD** for spares. Lionel VK4DR, QTHR, 07 3269 1058

WANTED SA

● **WW2 receiver BC342, BC348** or similar, any condn for restoration, prefer coils and gang to be unmodified. Rob VKSRG, QTHR, 08 8379 1889.

● **Ring gear part number 7501-005 for Daiwa rotator Model DR-7600A**; or second hand DR-7600A for spare parts. Paul VK5MAP, 08 8651 2398.

● **34th Annual Mount Gambier Radio Convention and Fox-Hunting Championships**, 6-7 June 1998 (Queen's Birthday weekend). Full schedule available on SERG Website at <http://www.seol.net.au/serg/default.htm>

WANTED WA

● **Rugged HF linear amplifier** suitable for 48-hour contesting; Alpha, Ten Tec Titan, or Emtron DX-2 (4CX1600B or 2 x 4CX800A versions); amplifier must be in good condn. Steve VK6VZ, 08 9298 9330.

MISCELLANEOUS

● **The WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

● If you got your licence before 1973 you are invited to join the **Radio Amateurs Old Timers Club**. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

● **Liverpool Club Auction, Saturday, 18 July** at Scout Camp in Cambridge Avenue, Glenfield, check-ins at 10 am, auction commences 11 am. For further details contact Garry VK2TSR, Honorary Secretary of LARDC, at PO Box 690, Liverpool NSW 2170, or 02 9631 9005 (BH).

● **34th Annual Mount Gambier Radio Convention and Fox-Hunting Championships**, 6/7 June 1998 (Queens Birthday weekend), full schedule available on SERG Website at <http://www.seol.net.au/serg/default.htm>

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Weekly News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601		President Hugh Blemings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD 3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://email.nla.gov.au/~cmakin/wiaact.html	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525		President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KUR From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298		President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au Web: http://www.tbsa.com.au/~wiavic/	VK3PC VK3XV VK3NC VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714 wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powerup.com.au		President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: Web: http://www.wiaq.powerup.com.au	VK4HD VK4JPH VK4WX 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463		President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.625 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873		President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6KZ VK6ZLZ VK6OO 146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busselton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738		President Ron Churcher Secretary Barry Hill Treasurer Mike Jenner Web: http://www.wia.tasnet.net	VK7RN VK7BE VK7FB 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).			Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times.

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TRADE PRACTICES ACT

It is impossible for us to ensure the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore, advertisers and advertising agents will appreciate the absolute need for themselves to ensure that the provisions of the Act are complied with strictly.

VICTORIAN CONSUMER AFFAIRS ACT

All advertisers are advised that advertisements containing only a PO Box number as the address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.

YAESU VX-1R MICRO DUALBAND HANDHELD TRANSCEIVER

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July 1998

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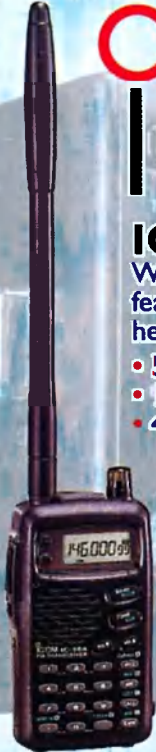
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If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with your local Post Office before contacting the registered office of the WIA

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Cover

A Gormandale Primary School student talking to Australian astronaut Andy Thomas VK5MIR with Principal Rob Higgins VK3JKA alongside. See the full story on page 7.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, *How to Write for Amateur Radio*, is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

BACK ISSUES

Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

DISCLAIMER

The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Viewpoint

Editor's Comment

Hopelessly Obsolete?

Last month I made a few remarks about the rate at which domestic electronic devices become obsolescent and eventually obsolete. Perhaps these terms need to be defined. I would say that "obsolescent" means that the device uses old but still functioning technology. Modern versions may work a little better but essentially do the same job.

Obsolete, on the other hand, means that the current technology is so much better than the old that the old is of no further value. It has been superseded and is now obsolete.

An example is anything which uses valve electronics. The change to solid state made things possible which had previously been impossible. For example, if the computers in the Apollo moon rockets had had to use valves they would never have left the ground! Transistors made it possible to walk on the moon!

And yet, so greatly has technology advanced since the 1960s, it is now possible to hold in one hand a package having more "computer power" than Apollo! This year, 1998, is the 50th anniversary of the invention of the transistor (by Bardeen, Brattain and Shockley).

Where will we be by 2048? Possibly using self-replicating logic structures of a storage density better than human brains? The only part we don't already have is the self replicating ability. It shouldn't be too hard to achieve in another 50 years, should it?

New Schedule

Until our May 1998 issue, the magazine had been typeset and printed by Industrial Printing and Publicity Pty Ltd of Richmond, Victoria. The May issue introduced a change to this arrangement, with the computer typesetting now being carried out by our Production Manager, Bill Roper, whose company vk3br Communications Pty Ltd has been producing the magazine under contract since January 1997.

It became apparent to Bill that now he was doing the typesetting it would be possible to shorten the production cycle from copy deadline to printer. This could either be achieved by making the date of publication earlier or by making the copy deadline later. For several reasons, the latter alteration was chosen, so that, for example, copy for this issue was not due until 12 June, whereas it would have otherwise been 8 June.

This change obviously means that material printed in each issue can be up to four days more recent than previously, even though it still is delivered to Australia Post on the same day (for this July issue, on 30 June). News items in particular can be nearly a week more topical and the change increases the efficiency with which time is utilised. The Publications Committee meeting each month will now be on the second Tuesday rather than the first. Let's see how it works out!

Bill Rice VK3ABP

Editor

ar

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

WIA Federal President Pays Tribute to Barry Goldwater K7UGA

The loss of Mr Goldwater to the amateur community leaves a big hole, said Wireless Institute of Australia Federal President Peter Naish VK2BPN on hearing of the death of the former US Senator and one-time presidential candidate who died on 29 May in the United States at the age of 89.

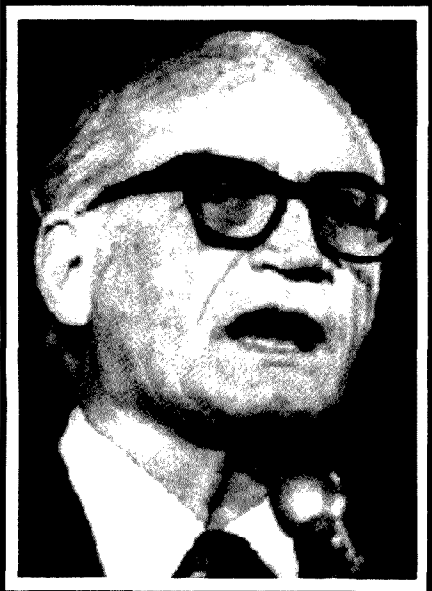
The man who said ham radio was more than a hobby, had been described as "a super ham" who was "concerned about the future of ham radio". American Radio Relay League Executive Director David Sumner K1ZZ said that, of amateurs in the public sector, Barry Goldwater was "without peer". He retired from politics in 1986.

Barry Goldwater was responsible for the piece of legislation that was approved in 1982 by Congress and signed by president Ronald Reagan. That piece of

legislation, to become known as the Goldwater Amateur Radio Legislation, was to recognise ham radio as a public service, giving amateurs recognition and privileges within the community they had not known before. One of those privileges was the 10 year licensing term enjoyed by US amateurs. Also, he worked on legislation to set up reciprocal licensing facilities with other countries.

He was one of the initial organisers of MARS, the Military Amateur Radio Service Network, a network providing communications between US armed service personnel in Vietnam and their families back home. His station was one of the key stations, operational 24 hours a day and had, at its busiest times, a crew of six handling traffic and doing phone patching.

MARS frequencies were just outside the amateur bands, as authorised by the FCC, and proved to be a tremendous morale boost for both the US Servicemen and their relatives. It also brought amateur



Notice to WIA Members

In the May 1998 edition of *Amateur Radio*, an apology was published in relation to a defamation claim made by Mr Deane Laws against the Wireless Institute of Australia.

This apology was published as part of the settlement of District Court proceedings. The proceedings have now been dismissed by the District Court, Southport.

We wish to stress to members that the claim was covered by a policy of insurance held by the Wireless Institute of Australia.

Further, there will be no increase in members' fees or advertising costs as a result of the settlement reached.

radio to the limelight in the US, causing an upsurge in the number of active radio amateurs in that country.

K7UGA's name will continue to be heard and appreciated in amateur circles as his name is given to the \$5000 Goldwater scholarship which was founded in 1983 and is awarded by the ARRL each year to an amateur with the aim of encouraging a spirit of achievement and dedication in the field of communication.

"He was a politician, but he was a radio enthusiast and enjoyed making a QSO along with the best of us", said Peter Naish in conclusion. He added, "Barry Goldwater will be missed, but the spirit lives on".

Relaxing Morse Code Requirements

The Radio Society of Great Britain has announced that it is ready to relax the Morse code requirements as an entry level to the HF amateur bands. The announcement by the RSGB President Ian Kyle G18AYZ said the important change of RSGB policy was aimed at turning around the decline in the number of people coming into the hobby.

He went on to say, "At its meeting in April, Council agreed that it would open discussions with the Radiocommunications Agency to begin a process of liberalising access to the HF amateur bands".

He also said that they saw the first step in this process to be the issue of an additional licence giving full access to the

HF bands to existing Class B licensees, subject to a five words-per-minute Morse capability.

Apparently the Society will be taking the subject of the maintenance of Morse as a mandatory IARU requirement along to the ITU World Radio Conference in 2001. According to the RSGB President, that is when the matter of Morse as a necessary qualifier for access to the HF bands is likely to be considered.

Mr Kyle said, "*Our hobby is in need of stimulation*". However, after making the statement which appeared to give Morse code a limited future, the President said, "*The Society wishes to see Morse and segments of the HF bands preserved as core elements of amateur radio globally*".

He concluded by saying that, "*The Society should take a forward looking and progressive stance on the future of our hobby*".

ACA Withdraws Two Shop Front Services

The Australian Communications has withdrawn two shop fronts providing across-the-counter services to clients at Coffs Harbour in New South Wales and Townsville in Queensland. The announcement from the ACA said that the move is the result of restructure of the customer service delivery functions which will see the implementation of a new regional structure.

Despite the change, a technical presence will be retained in both centres to provide spectrum maintenance services including interference investigation and audit and compliance activities.

Spectrum access services such as licensing and assignment of frequencies

are being handled by ACA area offices in Newcastle for Coffs Harbour, and North Queensland for Townsville.

The ACA Newcastle area office contact details are: Suite 1B, 239 King Street, Newcastle; PO Box 5124, Newcastle West 2302; Telephone 02 4929 6899; Facsimile 02 929 6068.

The ACA North Queensland office contact details are: 2nd Floor, Cairns Commonwealth Centre, 107 Lake Street, Cairns; PO Box 1225, Cairns, QLD 4870; Telephone 02 4031 4266; Facsimile 02 4051 3737.

The change took effect at Coffs Harbour on 12 June and at Townsville on 26 June 1998.

More Threats of Interference to the High Frequency Spectrum

Australian communications authorities are yet to comment on reports carried by the Radio Society of Great Britain's news service, quoting media news about the use of the electricity mains to distribute high speed data signals for the Internet and similar services.

An item on the subject appeared in the EMC column in the October 1997 issue of *RadCom*.

The principle is to inject a modulated carrier at a frequency somewhere between 2 and 10 MHz, and with a bandwidth of about 1 MHz, into the distribution cables

at the local electricity sub-station. A modem at the consumer's premises will receive the signal and extract the data. A similar return signal will be injected at the consumer's premises. It is feared that 'leakage' from such a system would cause severe interference, as emissions would take place wherever the cables emerged from the ground, including via lamp posts.

The RSGB EMC Committee is taking part in meetings chaired by the Radio-communications Agency, at which the company proposing the system, as well

as users of the HF band, are present.

The need to protect the amateur bands, and other vulnerable services, from interference has been put forward very strongly. The committee is also putting forward the view that the propagation properties of the HF bands are unique, and that

CW Will Be Around For a While Yet

Newly appointed International Amateur Radio Union Region III Liaison Officer for WIA Federal, Grant Willis VK5ZWI, agreed that, while the matter will attract much discussion at the ITU World Radio Conference, we should realise that Morse code is still an integral part of the existence of amateur radio and is not going to disappear overnight nor even in the foreseeable future.

Grant's appointment comes in the wake of the fact that long-time IARU Region III WIA Federal Liaison Dr David Wardlaw is now a serving member of the International Amateur Radio Union Region III as a Director.

every effort should be made to avoid unnecessary pollution of any part of the bands.

Appropriate comment is being sought here in Australia as to the possible effect of such a system and whether it would in fact be implemented in this country.

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US Hams in Recreational Convoy

Early in April 1998, in fact just prior to the Easter weekend, 40 radio amateurs arrived at Sydney. They were met at the airport by Geoff McGrorey-Clark VK2EO, the then President of the WIA (Wireless Institute of Australia) NSW Division and the Secretary of the Division, Eric Fossey VK2EFY. These hams from North America were preparing for an RV, or "Recreational Vehicle", assault on the roads of eastern Australia.

"RVing" is a big way of life for the North America. In Australia, we call them campervans or motor-homes, which is exactly what they are.

It is said that, in the USA at any time, there are a million of them on the road. A few months back 600,000 vans gathered at Quartzite, Arizona. Comprehending 1,000 vehicles in one location is difficult, but 600,000 defies the imagination. These vehicles are all capable of "dry docking", meaning they carry their own power and water and have their own septic systems. Most are retired people. Some spend most of their lives travelling in these RVs, others chase the warm weather and some are just casual RVers.

As everyone is from a different walk of life, they often group by their mutual interests. One group is comprised of radio amateurs who maintain regular radio nets and have some excellent communication systems when travelling (the cell-phone doesn't work everywhere as we so often find here). Last year a few of them toured Europe and the year before Alaska.

Two years ago, two of these radio amateurs came to Australia to meet with friends in King Creek that they had been in regular contact with via HF radio. It was decided to bring a group on a trek "down-under".

On the day they arrived, Geoff and Eric arranged for them to receive their Australian radio call signs from the ACA which they used with their portable radio equipment whilst travelling. They had to pick up their RVs from Arncliffe and drive them to Narrabeen on the north side of Sydney. This meant travelling through the City at peak hour which must have

been quite an experience for both the travellers and the locals. That day was when the big rain came and the travellers had their first real life experience as North Narrabeen (in Sydney's northern beaches area), went under water. What a welcome for the travellers.

On Sunday, after attending as guests of the WIA Radio Broadcast from Dural near Sydney, they joined the holiday makers on the Pacific Highway and headed for Port Macquarie Sundowner Caravan Park. No mishaps occurred in spite of driving on the opposite side of the road from their norm.

On the Sunday and upon their arrival in Port Macquarie, David Pilley VK2AYD was there to meet the band of trekkers. Monday morning they were introduced to Kingfisher Park and the wild life of Australia, especially the koalas and then it was over to "Pilley's Pad" at King Creek where they were met and hosted by the Oxley Region Amateur Radio Club to a good Aussie BBQ. At long last the face behind the voice was seen and North met South. No one got

lost as they all had good radio communications (and maps)!

On arrival at King Creek, the ORARC didn't know whether to put these 20 RVs into a circle (with a tow truck in the middle). The "Wagon Master" was Dick Glover, who hails from Bucks County, Pennsylvania and said he preferred whatever was best for Australia. Browns' cows won! When asked about driving on the "other side" of the road, there were no complaints. The only mishap so far was that one of the vans had a flat tyre and when trying to make the change found the spare was flat! One interesting gadget they had was a weather predictor and they confirmed there would not be any rain on Monday - (perhaps our weather bureau should be looking at these).

From Port Macquarie they headed north to Brisbane and turned in their RVs after which they flew over to New Zealand for a tour of the North and South islands.

It may seem just an ordinary camper-van trek to most, but for the radio amateurs in the Hastings area and the Americans, it was just great to meet and see the face behind the voice.

[Story compiled by David Pilley VK2AYD and edited by David Thompson VK2NH]

MIR Making News in the Media

Peter Ellis VK1KEP found himself thrust into celebrity status in early June after he talked to Andy Thomas VK5MIR on Saturday, 5 June.

Andy told Peter that he was the first VK1 he'd spoken to after which Peter decided to try for some local publicity for amateur radio. He wrote and sent a media release to the local media, and soon found himself the centre of a media frenzy.

He appeared on local radio twice, the front page of the Canberra Times, on TV

in Canberra and Sydney, on ABC Radio National, and even ABC Radio in Darwin!

Peter tells us that you can see the story of this unexpected Public Relations coup for amateur radio at Peter's Web site <http://www.geocities.com/CapeCanaverall/5796/vk1kep.htm>.

As Peter says, "Amateur radio couldn't buy that sort of publicity". Shortly after Peter worked MIR, Fred VK1FH made the second VK1 contact with Andy VK5MIR.

Amateur Radio Growing in Australia

There has been a recent report of 'Good News' on the growth of amateur radio in Australia. The figures, according to *Q-news*, were obtained by Bob ZL2CA

from the Australian Communications Authority. They show that, with revised figures supplied to him from the ACA for April, we are a "growing mob". Not

a lot, but we have made gains in ALL personal licence classes during 1998.

Table 1 - VK Licence Statistics for 1998

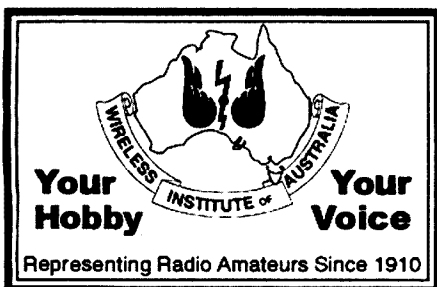
Lic Type	Jan	Feb	Mar	Apr
Unrestr'd	9521	9514	9546	9533
Intermed	1357	1353	1361	1362
Limited	2800	2797	2793	2802
Novice	1955	1964	1958	1963
Nov Ltd	268	269	272	281
Total	15901	15897	15930	15941

New Home For the Sydney Office of the ACA

The Sydney Area office of the Australian Communications Authority has now moved from its long-time location in North Sydney and has taken up residence on the other side of the Harbour in the Sydney Central Business District.

The new street location is Level 2 at 55 Clarence Street, Sydney, while their postal address is Box 5295, GPO Sydney 2001. If you are planning to use the telephone to contact them, the number to call is 02 9245 4000. The fax number is 02 9245 4099.

The body has had many different titles such as SMA, DoTC and now ACA. Under these different names, the functions have been carried out around the North Sydney area for many years. Besides the last location of the office in Miller Street, there have been offices in Berry Street, North Sydney and in Balls Head Road, Waverton as far back as the fifties.



Amateur Radio Certificates

To encourage WIA members to contribute articles to *Amateur Radio* magazine, the Publications Committee has decided to award certificates in several categories.

The time-honoured Higginbotham and Technical Awards, made annually, will now include certificates as well as cheques for \$100. In addition, attractive, coloured certificates will be awarded each month for "Best Contribution".

The first winner of a *Best Contribution Award* certificate is Les Brennan VK4XJ, whose article **50 Years of Mobile Radio Operation** was judged the best in the May 1998 issue of *Amateur Radio*.

The June 1998 winner of the *Best Contribution Award* certificate is Paul McMahon VK3DIP for his equipment review of the **Yaesu VX-1R Miniature Hand Held Transceiver**.
[Bill Rice VK3ABP]



ADF to Modernise its High Frequency Communications System

Australia's Department of Defence recently signed contracts valued at more than \$AUS382 million with Boeing Australia Limited to develop, support and operate a new high-frequency radio communications system for the Australian Defence Force (ADF).

It will comprise four ground communication stations located in the Riverina, Townsville, Darwin and the North-west

Cape of Western Australia. Each station will be remotely controlled by network management facilities in Canberra. The network is scheduled to commence operations in 2002.

[Source: *The IREE Society MONITOR*, Volume 23, Issue 2, 1998 - Contributed by Ray VK6PW, *Old Timers Newsletter* Editor Clem VK6CW and *Q-news*]

Support the WIA in order to protect amateur radio frequencies

Operating MIREX Comes to Gormandale

Chris Morley VK3KME
Secretary
WIA Eastern Zone Amateur Radio Club
PO Box 459
Moe VIC 3825

Students from the Gormandale and District Primary School recently had a unique opportunity to talk to Australian astronaut Andy Thomas aboard MIR.

They were part of a MIREX program whereby a school is selected and a time slot nominated by Moscow and NASA for a dedicated QSO.

Gormandale is a small rural town about 20 km SE of Traralgon in Gippsland. School Principal, Rob Higgins VK3JKA, nominated his school for the program about four years ago, but it wasn't until Andy Thomas apparently influenced the choice of an Australian school for the next MIREX that some serious planning commenced at Gormandale.

Rob enlisted the support of other members of the WIA Eastern Zone Amateur Radio Club and a planning meeting was held at the school to check out the site for horizon elevation, antenna possibilities and the general room set up. Even though Gormandale is in a valley, the horizons for a SE-NE satellite pass were low enough to see most of the pass.

Naturally, the grade 5/6 children were delighted to have been chosen to participate in the MIREX program, but what did it all mean for them?

Rob explained to them that a bunch of amateur radio operators would set up two way radio equipment in their classroom so that they could talk directly to the orbiting Andy Thomas, who is the NASA astronaut on board the Russian MIR space station.

The children were each asked to think of a question that they would like to ask Andy and those with the most interesting ones were chosen to speak on the day. The students had to learn microphone

technique and practised their questions over and over.

Word came from NASA via Graham VK5AGR that a time of 0659 hrs Sunday had been chosen for the contact; not exactly the most friendly time for the school children, but they were so keen that any time would have been all right.

The prime considerations with the radio station set-up were reliability and signal acquisition. It was decided to set up two completely independent radio systems at opposite ends of the large double class room. Each system would have its own antenna system and backup battery power supply.

Ralph VK3WRE tested different types of antennas including vertical, horizontal beam, turnstile and discone to determine which provided the best signals from the space station's antenna. Ralph's home-

brew discone (70 - 1296 MHz) came out tops, so it was decided to use it in conjunction with a 10 element Yagi to provide more gain at low elevation.

About two weeks before the assigned date for the QSO, fresh word came that 0659 hrs was not a good time for the other cosmonauts as it would be close to midnight Moscow time (on which the crew is based) and Andy could disturb their sleep.

With two days' notice, a new time of 1559 hrs on Wednesday, 27 May was allocated by Moscow via NASA and VK5AGR. Final planning could now commence.

Just in case Murphy was lurking somewhere, each piece of equipment was tested and double checked before being set up in the classroom. All systems were go.

Close to two hundred people, including students, teachers, parents and the media, assembled for the countdown. Using satellite tracking software, the MIR space station's path and position were projected on to a large screen for all to see.

Rob VK3JKA began calling VK5-MIR and the students counted down as MIR approached the horizon.

There was a huge sigh of relief when Andy's voice first came crackling through the radio. After a brief introduction and welcome by Rob, the children's questions started. They covered a number of



The Gormandale Primary School students who questioned Andy VK5MIR.

interesting topics and included the following:

“Do you press buttons to fly the space ship?”

“We have a control system up here which uses a computer and so you enter commands on the computer keyboard to fly the vehicle that way...”

“How many years training did you need to become an astronaut?”

“I did one year’s basic training to become an astronaut and then I got my first flight on the Shuttle. For this flight I did a year of training in Russia on all the Russian space craft systems - that was last year. I put quite a lot of time in to get to this flight. It does take quite a lot of training because there’s a lot you have to learn.”

“If you spun around in space would you be able to get dizzy?”

“Well, yes you would. That can happen, actually, because we float around inside the cabin and of course sometimes you float head over heels and upside down - you actually can make yourself dizzy if you do too much of it - believe it or not. Your balance system is still working - it’s a little messed up but it’s still working so you can get dizzy.”



The amateur radio operators who assisted at Gormandale Primary School: back row (l to r) Brian VK3BBB, Bill VK3EBQ and Ralph VK3WRE; front row (l to r) Rob VK3JKA, Chris VK3KME and Peter VK3KAL.

“If you had a yo-yo in space would it work like on earth?”

“That’s an interesting question actually - I had not thought about that. I don’t think that it would work actually.”

You need gravity and we don’t have gravity up here so there would be nothing to make it fall. I don’t think it would work at all. Some time we ought to try that. It would be interesting to see what happens.”

Andy’s voice came over loud and clear for almost the entire ten minute pass and everybody present was captivated by his clear and uncomplicated answers. As he finally disappeared over the horizon, some 2000 km away, we said goodbye, wished him a safe return to earth and then lost contact. Spontaneous applause broke out in the class room and there were smiles all around. The planning had been worth the effort and the students had something that they would remember for a long time.

So that other schools in the Latrobe Valley could share the experience, both the uplink and downlink were re-transmitted and radio operators provided coverage in three other local schools.

WIN TV covered the event and managed to return to their news studio in time to present a segment a couple of hours later on their 6 pm evening news.

Our radio club, and amateur radio in general, received a welcome boost of publicity and demonstrated to the students and local community just how we could bring space into the classroom.

ar

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

**420-450 MHz is wanted by Australian commercial interests
RF emission regulations threaten handhelds, mobile rigs,
and suburban home stations, with bureaucratic limits**

More of 7 MHz is wanted by global broadcasters

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**Your
Hobby**

**Your
Voice**

■ Transmitters

The DSB40 - A 40 Metre DSB Transmitter

Peter Parker VK1PK
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E-mail: parkerp@pcug.org.au
Home Page: <http://www.pcug.org.au/~parkerp>

Introduction

Many people are daunted by the complexity of building an SSB transmitter, but would still like to construct a voice rig. This article describes a simple low powered double sideband suppressed carrier (DSB) transmitter for the experimenter.

Because no crystal filters or frequency conversions are required, it is considerably easier to build than an SSB transmitter of equivalent power. Operating on forty metres, it features a variable crystal oscillator (VXO), allowing a degree of frequency agility. Contacts ranging from 200 to 1000 kilometres have been made with this rig. A 'bare bones' approach was taken to keep costs down. However, a list of suggested improvements is given elsewhere in this article.

Circuit Description

The transmitter's frequency is determined by the VXO. Depending on the crystal, variable capacitor and series inductor used, between five and fifteen kilohertz frequency shift per crystal should be obtainable.

The operator's voice is amplified by the 741 microphone amplifier. A telephone ear-piece was used as the microphone. Its output nicely matched the amplifier's driving requirement, so no microphone gain control was needed.

Signals from the VXO and the microphone amplifier are brought together in the balanced modulator, which uses an NE602 chip. The 10 k potentiometer is adjusted for minimum carrier. The output

from this stage is a signal consisting of two voice sidebands and a greatly reduced carrier.

The following three stages amplify the NE602's output to a level suitable for communication. The circuits used are similar to those used in many transmitters developed by Drew Diamond VK3XU. Expected power output is around two watts. This can be varied by adjusting the 10 k bias potentiometer. Harmonics are attenuated in the pi-network.

Push-to-talk operation is included in this transmitter. With the microphone button up, the antenna is connected to the receiver via the T/R relay. When the PTT is pressed, power is applied to the transmitter and the antenna is switched over to the transmitter's pi-network.

No receiver muting circuits are incorporated. However, such a facility could be added by modifying the receiver and making use of the spare contact on the relay, which is at 12 volts during reception. A simpler alternative is to wear headphones when operating and make use of the receiver to continually monitor transmission quality.

The receiver used with the transmitter could be either a general coverage or amateur-bands only type. A Sony ICF-7600D, which features a digital frequency display, all-HF coverage and a BFO for SSB is a good choice, particularly for portable work. Alternatively a home-brew direct conversion set could be used. To take advantage of the transceive operation possible, the set's internal VFO should be disabled and the output from the trans-

mitter's VXO used to drive the receiver's mixer. However, if this is done, modify the connections to the VXO so that it runs during both transmit and receive.

Construction

Build the transmitter in a metal case. A 19 x 12 x 6 cm die cast box is ideal.

A variety of construction methods can be used to mount the components. Indeed, the prototype includes stages assembled with point-to-point wiring (VXO), conventional through-hole printed circuit board (microphone amplifier, balanced modulator, RF amplifier), matrix board (T/R relay and pi-network) and components soldered direct to printed circuit board material (driver and power amplifier). Whatever methods are chosen, keep RF-carrying leads short and direct. As well, mount the PA as far as possible from the VXO to minimise the risk of feedback problems.

Construct and test each stage in turn. Assembly should take place in the order of VXO, microphone amplifier, balanced modulator, amplifier, driver, and power amplifier/pi-network/transmit-receive switching.

VXO

The oscillator circuit described here should work first time. The main challenge is to obtain the maximum amount of frequency swing consistent with good stability - with a rig such as this, more VXO swing equals more contacts.

The pulling range obtained depends on a number of factors, including the crystal type (HC6/U type is best), the number of crystals used (two in parallel are better than one), the value and type of the 22 μ H series inductance, the minimum capacitance of the variable capacitor and the values of other capacitors in the oscillator (in this case the two 1000 pF units).

Allow at least a half day to build and perfect this circuit. If you have only one crystal, omit the crystal select switch; this merely adds capacitance which detracts from the pulling range. Also avoid the use of crystal sockets for the same reason. If operation is unreliable or unstable, try reducing the value of the 22 μ H series inductor.

Also, experiment with different types of series inductors (10-20 turns on a two

hole TV balun core performs well in VXO circuits) and try varying capacitor values.

After each change, measure the frequency shift and short-term frequency stability; if the frequency shifts 200 Hz in a few seconds, there is definitely a problem, and you may be trying to pull the VXO too far.

Speech Amplifier

This stage is the easiest to construct and test.

When it is finished, apply 12 volts, a microphone, and connect a pair of high impedance headphones across the output (between the free end of the 100 nF capacitor and earth).

Talking into the microphone should produce a sound in the headphones.

Balanced Modulator

Again this stage should be fairly straightforward.

After verifying the operation of the 78L05 voltage regulator (by checking the voltage on pin 8 of the NE602), attach a piece of wire to pin 5 of the NE602 and bring it near the antenna socket of a 7 MHz SSB receiver.

A carrier signal from the transmitter should be audible when the receiver is tuned to the VXO's frequency. If not, insert a screwdriver or short length of wire into the receiver's antenna socket for greater signal pickup.

Speaking into the microphone should cause your voice to be audible on the receiver. Adjust the receiver's RIT control for best clarity. The signal should be clear and undistorted on both sidebands. The

carrier will be audible if the receiver is detuned slightly. Adjust the 10 k potentiometer for minimum carrier; this should occur when it is near the middle of its rotation.

RF Amplifier Stages and Pi-Network

These stages are built and tested individually. There are two adjustments, one to bring the collector circuit of the 2N2222 to resonance on 7 MHz, and the other to vary the bias on the PA's gate.

The first amplifier uses a T50-2 iron powder toroid. It has 13 turns on the primary and three turns on the secondary. The remaining two stages are broadband. FT50-43 ferrite toroids are used here. Both toroids have seven turns, bifilar wound. Enamelled copper wire of around

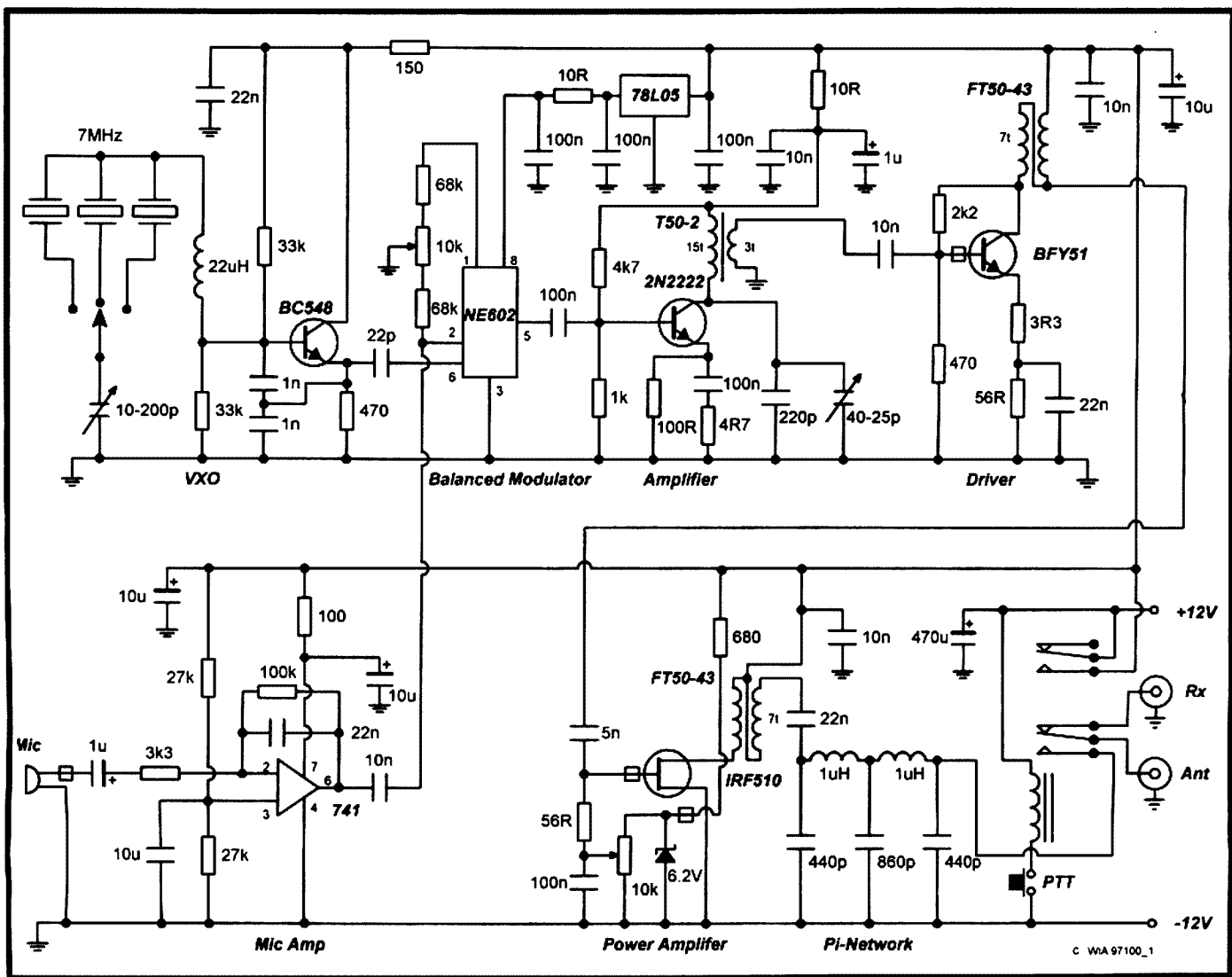


Fig 1 - Schematic of the DSB40 DSB transmitter.

0.4 mm diameter was used in the prototype.

The inductors used in the pi-network are 1 μ H prewound units obtained from salvaged electronic equipment. 13 turns on a T50-2 toroid would be a good substitute.

The odd values in the pi-network are due to the use of salvaged mica capacitors of non-standard values. In some cases two had to be wired in parallel to obtain the correct value. Variations of ten or twenty pico-farads are unlikely to dramatically affect pi-network effectiveness.

The driver and PA stages are amongst the most difficult stages to build and test in any QRP transmitter. The difficulty is magnified in SSB/DSB equipment due to the requirement for these stages to operate linearly.

Maladies which can affect transmitter RF amplifier chains include distortion to the transmitted audio (due to non-linearity), insufficient drive to the next stage, and the generation of spurious (either on specific frequencies or as broad-band hash). At times such problems may not be apparent with a 50 ohm dummy load connected, but will show up when an antenna or antenna coupling unit is connected.

Reference 1 suggests cures for these problems. In every case it is important to isolate the offending stage and apply remedies to it. Along with optimising VXO coverage, troubleshooting the driver and PA stages can be the most time-consuming part of constructing transmitters such as this.

Transmit-Receive Switching

The transmit/receive scheme used in this transmitter uses a single DPDT relay. One set of contacts switches the antenna between transmitter and receiver. The other set applies 12 volts to the transmitter when in use. Note that, when in receive, no part of the transmitter is powered up. This eliminates the possibility of interference being caused to the receiver by stray radiation from the VXO.

Operation

Operating the station requires that the transmitter and receiver be brought to the same frequency. This can be done by switching in the receiver's attenuator and

adjusting the VXO until the carrier (which should be considerably weaker than the sidebands) is zero beat on the receiver.

Speaking into the microphone should result in a signal that is on the same frequency to which the receiver is tuned. Operating is otherwise similar to using any other PTT-controlled station. However, as there is no receiver muting, headphones should be worn during transmit to prevent audio feedback.

Results

From VK1, contacts have been made with VK2, 3 and 5 with this transmitter. A full-sized dipole or better is recommended for best results.

Improvements

The transmitter as described is capable of making random contacts on forty metres throughout South-eastern Australia. However, several changes can be made to improve results obtained and ease of operating considerably. These include:

1. Extended VXO pulling range, either through using a twin crystal VXO or a 3.58 MHz ceramic resonator VXO and a frequency doubler;
2. A direct conversion receiver to avoid the need for a separate receiver; and
3. A linear amplifier to boost power to 10-30 watts.

Obtaining Parts

The prototype transmitter was built largely from junk box components. The most expensive component is the 7 MHz crystal. Some suppliers sell 7.159 MHz crystals for a few dollars. These are useful for testing, but are in an unpopulated part of the band, and contacts are likely to be rare unless prearranged.

A frequency somewhere between 7.060 and 7.100 MHz is likely to be most successful. Such a crystal can be ordered from suppliers such as J & A crystals. Expect to pay around \$20 for a new one. 40 metre crystals sometimes also appear at hamfests and junk sales. Where possible, buy two to take advantage of the greater pulling range available when using two crystals in parallel.

Other hard-to-obtain components, such as the NE602, IRF510 and toroids should be available from suppliers such as Stewart's or Truscotts. Polystyrene capacitors are recommended in the pi-

network and the VXO, and are sold by Dick Smith Electronics. DSE also sells transistor radio-type variable capacitors, which could be substituted for the air-spaced unit used in the prototype.

The compression-type trimmer is not easy to find new, but is common in early transistorised HF radio equipment. Alternatively, the constructor could raise the value of the 220 pF capacitor so a smaller, more modern trimmer could be used instead.

Reference

1. *DeMaw/Hayward, Solid State Design for the Radio Amateur, ARRL, 1986*

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Production of Amateur Radio Magazine



Expressions of Interest

The current agreement for production of *Amateur Radio* magazine expires with the December 1998 issue. The Directors of the WIA (Federal) are seeking expressions of interest from companies or individuals interested in producing the magazine on behalf of the Institute.

Expressions of interest may include any or all of the components of production of the magazine but, as a minimum, must cover the management and preparation of layout, printing and circulation via Australia Post.

Further enquiries can be made to Martin Luther on 08 8340 1666 (BH), 08 8524 3440 (AH) or by fax on 08 8524 3836.

Written expressions of interest should be sent to WIA Federal, PO Box 2175, Caulfield Junction VIC 3161 by 31 July 1998.

■ Equipment Review

The Magellan GPS Pioneer

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About 15 years ago, when I was sporting the callsign EI6BTB, I drove from my home in Cork to spend a weekend with some friends in the seaside hamlet of Cleggan, County Galway. The drive was a long one, about six hours, and it was well after dark when I passed through the village of Clifden, where Marconi conducted his famous trans-atlantic communication experiments early this century.

Leaving Clifden, heading north, there is a sign off the main road, marked "Coast Road", and having been told that Cleggan was by the sea, the coast road seemed a reasonable choice. As they say in the movies, that was a big mistake...

I fully appreciated the extent of my mistake several miles later, when the "Coast Road" became narrow and twisted, and developed a luxuriant grass strip down its centre. But it was too narrow to turn around, and I persevered, reasoning that I had gone so far that surely this narrow winding track must lead somewhere.

And go somewhere it did. After a full 20 miles, the Coast Road rejoined the main road I had left an hour before; a road sign marked this happy reunion: it read, "Clifden, 2 miles". Experience, the saying goes, is what you get just after you really could have used it!

Not long after, Global Positioning satellites became a reality and, in recent years, the price of this wondrous technology has become ever more accessible. The Magellan GPS Pioneer is a recent arrival on the scene, and it was on a different "Coast Road", namely the Queensland Coast and Northern New South Wales, that I evaluated this unit.

At first glance, the Pioneer resembles an Amateur HT, or a mobile phone (see photo.) The obvious differences are a much larger display, and the lack of a numeric keypad.

The unit is of a fairly rugged construction, with the antenna an integral part of the case. The case itself has a rubber backing, which allows the unit to sit still on a car dashboard without moving around. The keypad is also rubber (reminiscent of the old Sinclair Spectrum computer); the main control is a four-way

"cursor" style control, which is surrounded by seven smaller buttons, labelled, PWR (power), MENU, GOTO, ENTER, NAV (navigate), MARK, and a light bulb (back light).

In terms of programming complexity, setting up the Pioneer is no more difficult to set up than the average Amateur HT. The larger display allows sufficient "prompting" for most operations, though I did have to refer to the slim operating manual on a few occasions.

I have to admit, however, that I suspected some April foolery when I first set up the unit. When I pressed the MENU button and accessed "EZSTRT" (Easy start - God bless American English!) the first thing the unit did was to ask me where I was! Somebody's idea of an Irish joke for an old EI, perchance?

No, it was simply to give the unit an idea of which GPS satellites were expected in the area at the time. According to the manual, if you move more than about 300 miles with the Pioneer switched off, you need to perform this operation so that the unit can "get its bearings".

The remaining "EZSTRT" menus set various operating and display parameters,



At first glance, the Magellan Pioneer (at left) resembles an amateur HT such as the Yaesu FT-50.

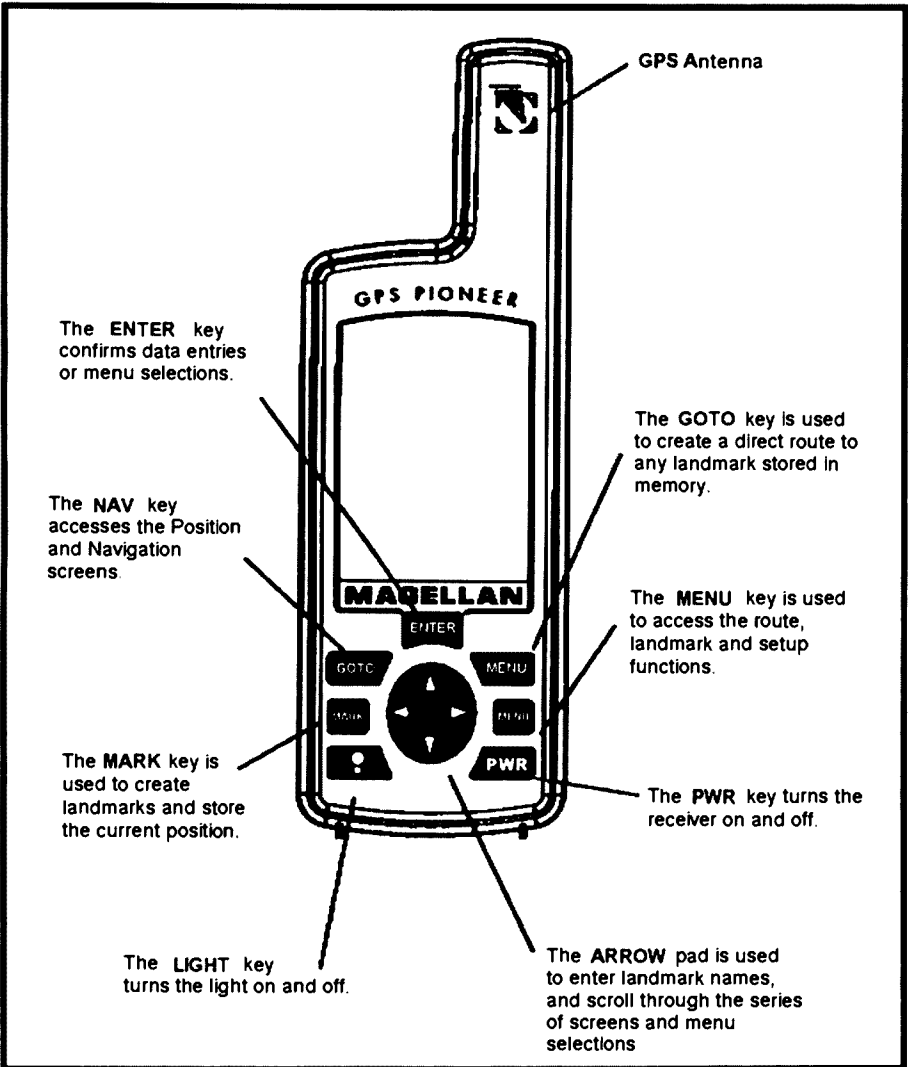


Fig 1 - The front panel and controls of the Magellan Pioneer.

such as map datum, units (miles, km, etc), time display (12 or 24 hour, or UTC), north reference (magnetic or true), co-ordinate display (deg/min/sec, UTM, Irish(!), etc.) There is also a demo mode, the usefulness of which eluded me.

Once the EZSTRT is complete, all you need to do is place the Pioneer somewhere with a clear view of the sky, and wait. The unit can track up to 12 satellites at a time, requiring at least three visible birds to triangulate one's position. It normally takes several minutes to track enough satellites to indicate your position, though if the unit does not have a clear view of the sky, it can take considerably longer.

During signal acquisition the unit displays a large circle (a sort of "compass") surrounded by a number of smaller circles representing the expected positions of the various satellites in the area. An

arrow in the centre of the circle sweeps around, pointing at each satellite in turn, a small indicator showing the expected elevation above the horizon. If the satellite is visible, the small circle is filled in.

Once the unit is "tracking" (three or more satellites visible) the display changes to show your position on the planet using the co-ordinate system you chose during EZSTRT. This is of limited use unless you have a map or some other reference to hand. Pressing the NAV button changes the display to show your position relative to a pre-programmed reference point; pressing NAV again changes the display slightly to a form more suited to aeronautical use.

Reference points can be programmed in quite easily. I found Dick Smith's Australian GPS Location Guide quite useful in this respect, as I could look up

my destination on a trip, program it in, and observe my position getting closer as I progressed. Up to 99 such "landmarks", can be memorised in this way. Your current position (eg a camp site) can also be memorised, allowing you to return to some arbitrary point later. Each memorised location can be labelled with a four character name.

Of course, nobody ever travels in a straight line (crows excepted, of course!) The GPS Pioneer lets you program in your journey with up to ten way-points, which makes following your progress much easier. At any given time you can check your distance and bearing towards the desired landmark. The display will also indicate your speed and direction.

However, I did have some misgivings about the reliability and accuracy of the unit. As I mentioned earlier, I tested the unit on the Gold Coast's Main Beach, which has more than its fair share of high rise apartment blocks. At times I found it quite difficult to get the unit to track, presumably because the apartment blocks were blocking the satellite signal. Even on the beach, away from the buildings, it would lose track.

In the national parks at Mount Warning and Binna Burra, the trees had a similar effect. I don't know how other GPS units would fare in similar circumstances, but if the Pioneer is anything to go by, then GPS and rainforests definitely do not mix!

What bothers me more was that the unit gives no obvious indication that it is no longer tracking (eg a beep, or blinking the displayed position would be good,

Low Cost GPS units for Amateur Applications?

The VK2 Division's Olympics committee (<http://marconi.mpce.mq.edu.au/wia/olympics.html>) is examining GPS applications for the games. Darryl Smith VK2TDS (vk2tds@ozemail.com.au) recently sourced one from the USA costing \$US95.00 The unit resembles a computer mouse; it has no display or keyboard, its only interface being a serial cable. VK2TDS is looking to establish an Internet mailing list for those wishing to discuss APRS. Details at <http://www.tapr.org/gps/gps30pc.html>

GPS In a Nutshell.

Global Positioning System (GPS) is a satellite-based navigation system. Using as few as three satellites, one's position can be triangulated in three dimensions.

The satellites orbit at an altitude of about 21,000 km and transmit on two frequencies, 1575.42 MHz (called "L1"), and 1227.60 MHz (called "L2"). GPS receivers compute their position using the L1 and L2 carriers, plus Course Acquisition data ("CA") on L1, and Precise Codes ("P Codes") on both L1 and L2. The more of this information the GPS receiver uses, the greater the accuracy.

Typical accuracy of GPS is in the order of 25 metres, though Selective Availability intentionally degrades this to around 100 metres. Differential GPS, which uses a second reference receiver in a known position, can be used to "cancel out" the inherent errors in the system, giving accuracy in the order of centimetres (extracted from the Obsidian Hydration Analysis Service GPS page).

Internet enabled readers who would like to find out more about the Global Positioning Systems can start with the following Web links:

Starlink DGPS page: <http://www.starlinkgps.com/faq.htm>

Peter Bennett's GPS FAQ (Frequently Asked Questions) <ftp://sundae.triumf.ca/pub/peter/>

Obsidian Hydration Analysis Service GPS Introduction page <http://www.ohas.com/gps.html>

John T Beadles' Introduction to GPS Applications <http://galaxy.ernet.net/editors/john-beadles/introgps.htm>

John T Beadles' GPS Archives: <http://www.he.net/~jbeadles/gps/index.htm>

United States Coast Guard Navigation Centre GPS page <http://www.navcen.uscg.mil/gps/>

APRS - Amateur Radio Packet Position Reporting System <http://www.cave.org/aprs/>

Telson Communications GPS page - <http://www.telson.net/gpsfaqs.htm> (includes a rather uncomplimentary article on Magellan GPS Pioneer)

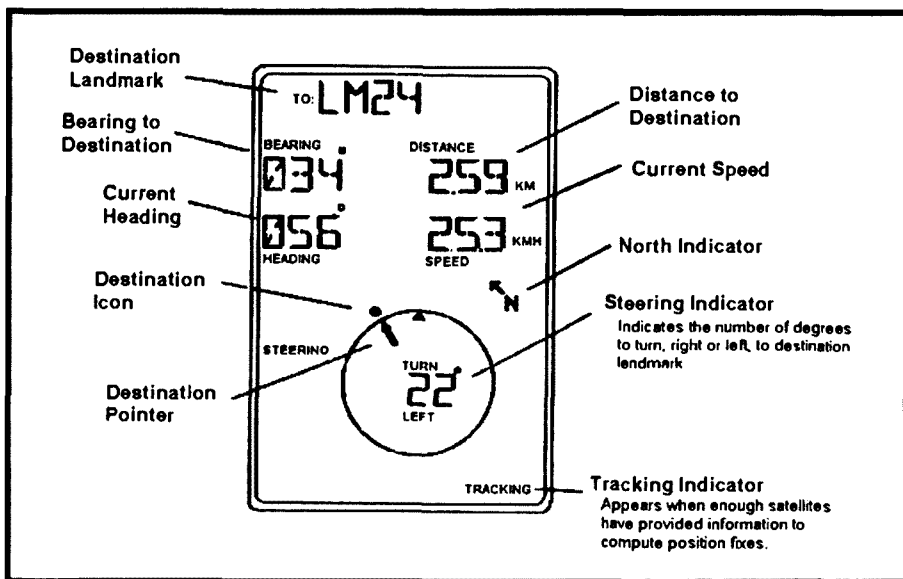


Fig 2 - Diagram of the LCD readout of the Magellan Pioneer.

rather than the small "tracking" flag tucked in one corner of the screen.)

I also wanted to know how repeatable the readings are, so several times I "marked" a particular spot, went off for a drive or a walk, and checked the "distance to landmark" when I returned. The indicated position was frequently off by as much as 600 metres!

Discuss GPS accuracy with anyone who has used one, and they'll start talking about "selective availability", which is the deliberate errors the US Department of Defence slips into the system from time to time. Presumably, this is to prevent unfriendly foreign powers from kitting out their guided missiles with GPS receivers. However, I have been told that selective availability is currently inactive, which may or may not be true; in any case, it should only account for errors up to about 100 metres.

Another correspondent suggested that GPS satellites at low elevations might not be as accurate as those overhead, which seems plausible. At this point I'm reserving judgement.

The Pioneer seemed to perform well enough sitting on the dashboard of the car during highway driving, though it is intended mainly for handheld use, for example when bush walking. I still have my doubts about its accuracy (600 metres is a hell of a long way in dense bush), and the loss of signal in the forests completely rules it out there. The concrete jungle is little better.

However, bear in mind that the Magellan Pioneer is the lowest cost handheld unit on the market. Those users who require a more sensitive unit for use in heavily forested areas (and even in the concrete jungle) will be interested in the forthcoming review of the Magellan GPS2000XL.

The GPS Pioneer will run on a pair of AA batteries for 24 hours; a cigarette lighter adapter is also available. The carry-case is optional, and there is no provision for an external antenna. APRS fans can forget about the Pioneer, as it has no external data port.

All in all, though, I found the Magellan GPS Pioneer easy to use and a lot of fun (notwithstanding many sardonic comments from the YL and her daughter about "boys and their toys"!).

When it came time to return the unit to its rightful owner, I had no trouble finding my way there.

The Magellan GPS Pioneer is available from Dick Smith Electronics (catalogue No D-3927) for \$299. Accessories extra. Dick Smith's Australian GPS Location Guide (catalogue No B-2390) is \$14.50.

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Technical

Technical Abstracts

Gil Sones VK3AUI
C/O PO Box 2175
Caulfield Junction VIC 3161

Passive Narrow Band AF LC Filters

Some useful LC narrow band audio filters appeared in the *Technical Topics* column of Pat Hawker G3VA in *RadCom*, March 1998. These filters were the work of Jan Smeets ON4ASZ/EA3DPB. The filters were built using 88 mH toroids. These may be hard to obtain and a suitable alternative was given which is a TOKO 719VXA9032 80 mH coil.

The filters are for a centre frequency of 780 Hz or 800 Hz and are intended for

use with high impedance headphones. They are driven from the 8 ohm audio output of a receiver. The filters are shown in Fig 1. The 10 micro-farad capacitors can be replaced with 20 ohm resistors and the 20 micro-farad capacitors with 10 ohm resistors at the expense of increased insertion loss. The preferable method of making the filters is to use capacitors.

The design at Fig 1(d) does not require an audio transformer. A low impedance termination can be accommodated and this is shown in Fig 2. In order to get the

best peak, some experimentation with the capacitor values will be needed in all the multi-section designs. This is because of the spread of capacitor values due to manufacturing tolerances. Paralleling small value capacitors with the larger values should enable the sharpest peak to be obtained.

Also included is a threshold limiter to be used between the filter and the headphones. The purpose of this is to introduce some distortion to the tone. This

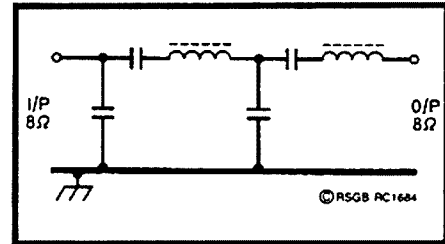


Fig 2 - Low impedance termination modification.

is done to make the tone more acceptable by introducing harmonics to make the tone more musical. The limiter circuit is shown in Fig 3.

Power Attenuator

A power attenuator is a handy item to have. It allows a small sample of the output of a piece of equipment to be fed to an instrument. It is like having a tap on a dummy load but it is matched.

A means of making a power attenuator, with 30 dB attenuation using a power 50 ohm resistor or dummy load, was given in the *In Practice* column of Ian White G3SEK in *RadCom*, December 1997. The idea is to use a power 50 ohm resistor, such as used in a dummy load, as one arm of a T section attenuator. Only the input arm of a 30 dB power attenuator needs a significant power rating and the 50 ohm power rating carbon resistor is close enough to the value required for the input arm of a 30 dB attenuator.

The configurations of both T and pi attenuators, with both resistor values and power dissipations for a 30 dB attenuation, are shown in Fig 4.

The pi configuration needs a 790 ohm six watt resistor which is hard to achieve with low inductance and low stray capacitance. The T configuration is somewhat easier to realise as the six watt resistor R2 is only 3.2 ohms. This is much

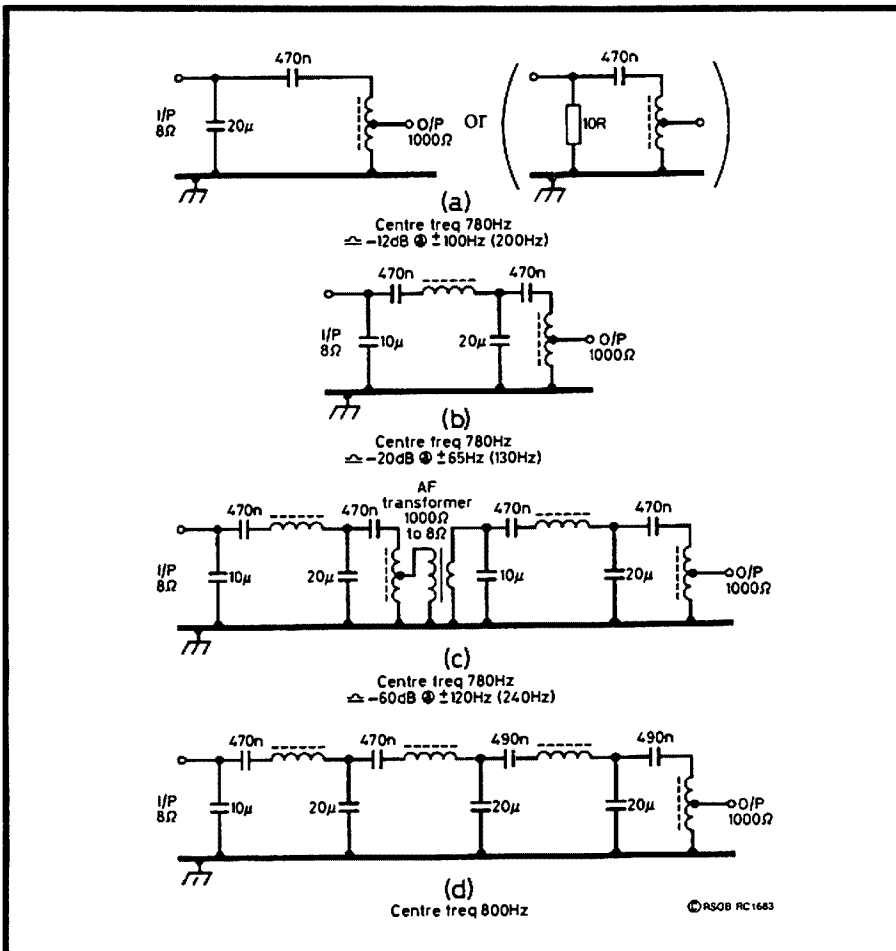


Fig 1 - LC audio filters using 88 mH toroids.

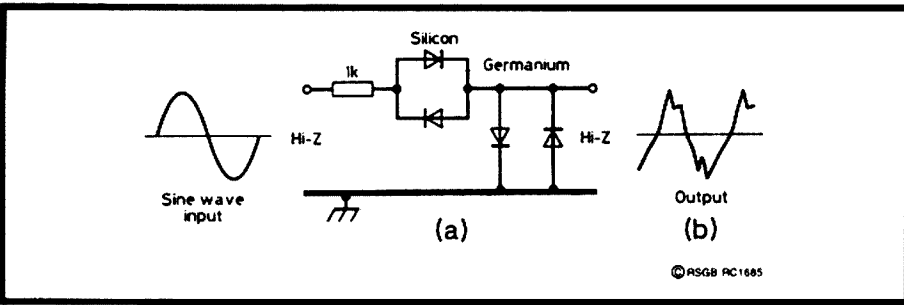


Fig 3 - Non linear threshold limiter to produce a more musical note.

easier to achieve as the low inductance can be achieved by paralleling a lot of 0.5 watt resistors and the stray capacity is less significant.

The output resistor R3 can be a standard carbon 0.5 watt resistor. A 47 or 51 ohm resistor should be suitable. The input SWR is 1.07:1 which is quite acceptable.

The low value resistor R2 can be made out of twenty 68 ohm 0.5 watt resistors, which results in a value of 3.4 ohms for R2. With this value the attenuation will

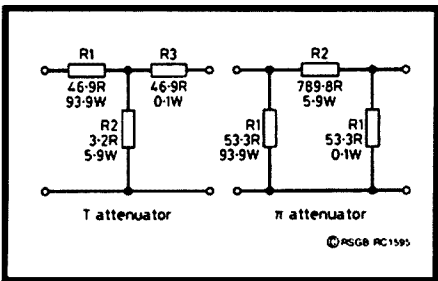


Fig 4 - 30 dB attenuator configurations.

be 30 dB if the power resistor R1 is exactly 50 ohms.

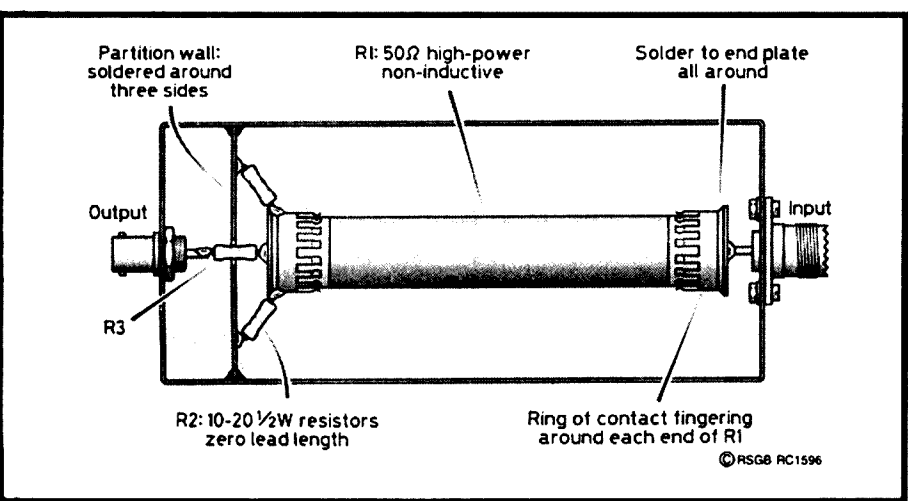


Fig 5 - Construction of 30 dB power attenuator.

The construction of the 30 dB power attenuator is shown in Fig 5. The partition between input and output is important. The resistors making up R2 should be soldered around the end of R1 to the separating partition. R1 should be held by finger stock. If you find this hard to obtain you could make your own out of Phosphor Bronze shim stock. In the UK, Phosphor Bronze shim is sold as weather strip for draught proofing doors. A trip around our hardware stores may bring a similar source to notice. If you are modifying an existing load, then the connections should not be a problem.

Broadcast Station Wave Trap

HF receivers can sometimes suffer from interference from a local broadcast station. In the *Down to Earth* column of Steve Ortmayer G4RAW in *RadCom*, March 1998, a simple wave trap was described. This should be a simple solution to the problem.

The wave trap is shown in Fig 6. The wave trap is built in a small diecast box using broadcast radio components. A coil wound on a ferrite rod is used. Around 80 turns of 30 SWG enamelled wire wound on a paper former around a transistor radio type ferrite rod should be suitable. You could avoid winding the coil by using a transistor radio aerial coil wound on a ferrite rod.

The tuning capacitor is a transistor radio component. Both the capacitor and the ferrite rod and coil are available from parts retailers such as DSE. Alternatively, you could salvage parts from defunct transistor radios.

The wave trap was built into a small diecast box and coaxial connectors were used for input and output.

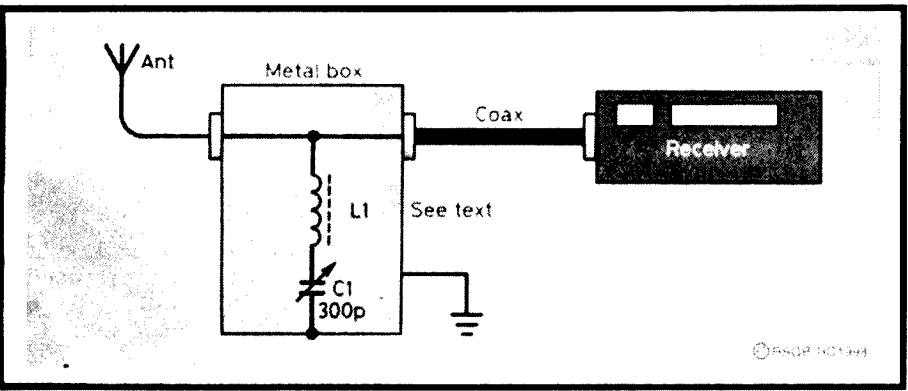


Fig 6 - Broadcast station wave trap.

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■ Antennas

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Comparing Antennas

Many years ago an English radio club decided that they would put the annual field day contest to good use. Instead of just running up a high score, they decided to use their contacts to evaluate several common wire multi-band antennas and to write up the results in the RSGB magazine, *RadCom*. They called their article "Which Antenna". Now, this was way back in 1968 and so far I have yet to see another article to compare with this one.

Their antenna farm consisted of trap dipoles, one horizontal and one inverted 'V', a G5RV, standard dipoles and a trap semi-vertical. In summing up, they considered the trap semi-vertical to be the best all round antenna with the G5RV a long way down the list.

I will describe the trap semi-vertical later; it's a very simple but effective antenna. But first you might like to hear how the other antennas performed relative to the trap semi-vertical. Here are a few details from the original article looking at 80, 40 and 20 metre performance.

80 Metres

Firstly, 80 metres. *Without doubt the best all-round antenna was the reference dipole. This produced consistently better reports than any of the other antennas, except in the case of DX where, into ZL, the trap semi-vertical was the only antenna which enabled the stations worked to hear us. This was also borne out in receiving these stations. They could not be heard on any other antenna. The reports received on the trap semi-vertical were strength 6 to 7 so the difference was quite marked.*

On European (local) contacts the trap semi-vertical was 1 to 2 "S" points down on the dipole. The trap dipole proved to be only slightly down on the dipole. The reports received and given included just under half where no difference could be

detected. The others varied between 1/2 and 2 "S" points down.

In the case of the G5RV, as with most of the other antennas, what could be worked or heard on the dipole could also be worked on the G5RV. However, the reports were consistently down 2 to 3 "S" points.

40 Metres

This band proved to be the most interesting, and the most difficult, in terms of evaluating the results.

Again, similar to 80 metres, the reference dipole did very well. The trap dipole proved to be more or less identical in performance to the dipole. There were some discrepancies, but 70% of the stations worked could detect no difference between the trap dipole and the reference dipole.

The antenna that came out best was the trap semi-vertical. Of the reports logged, 30% were the same as the dipole while the others were up by quite a bit. The Europeans (locals) were those giving comparable reports to the dipole while

the DX contacts were well up. In the case of a W4 there was no copy at all on any other antenna. W3 and ZL stations were two "S" points up compared to the dipole.

The G5RV results were similar to those logged on 80 metres, about two to three "S" points compared to the reference dipole; however, on long haul DX, it was not so far behind being only one "S" point down on a contact to ZL.

20 Metres

Contacts on this band were mainly with Europe, with a couple of VKs thrown in for good measure.

The G5RV did not perform as well as expected on this band. The SWR was at its lowest on this band but reports were generally about two "S" points down compared to the dipole. However, in 12% of the logged reports the G5RV was the same or up by as much as two "S" points up compared to the dipole. The trap semi-vertical gave some interesting results with 50% of the reports being slightly down compared to the dipole, and the other 50% the same strength. One third of the trap dipole reports were down compared to the dipole with the remainder being slightly up or the same.

The largest discrepancies between the two antennas were from the nearest and furthest contacts. The signals were two "S" points below the dipole into VKs and the same report was received from about 20 miles away.

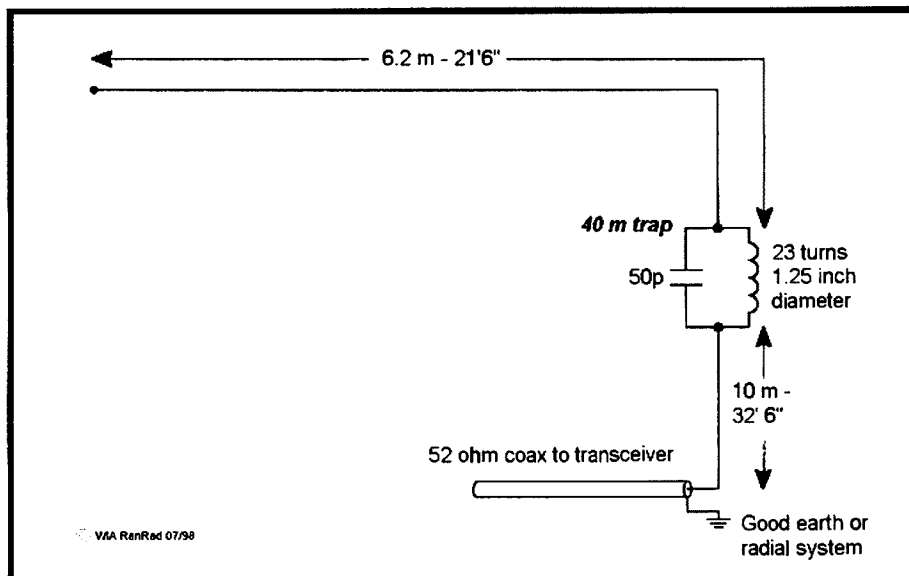


Fig 1 - The trap semi-vertical antenna.

Conclusions

Summing up the results was not easy. Probably the best all round antenna for multi-band operation turned out to be the trap semi-vertical, but a good earth is an absolute necessity.

The G5RV did not come out too well on these tests. It is, of course, a compromise antenna and it appears to be more of a compromise than the trap dipole. It was a puzzle on 20 metres, particularly after hearing so many good reports from other stations using them. The fact remains, however, that in direct comparison tests it was out-performed in most cases by other antennas.

Trap Semi-Vertical

Well, by now no doubt you are eager to hear all about the wondrous trap semi-vertical antenna.

First off it can be a very compact antenna. I guess the best way to describe it is to compare it with a commercial trap vertical antenna. There are two important differences. First, it works much better than the commercial antenna, and second, the cost is almost zero.

It works better because it's longer, but not necessarily in a vertical direction. This antenna is part vertical and part horizontal. The longer the vertical section, the shorter the horizontal section and vice versa. As the high current portion for each band is vertical the angle of radiation is low.

It is suggested that the vertical section be made up from a piece of aluminium tubing. You will need to insulate the base and guy the mast with nylon or similar insulating material. Don't run the vertical section up the side of a metal mast or tower!

The total length is about 54 feet (16.4 metres) for 80 to 10 metre operation and it is fed with 50 ohm coaxial cable. The centre conductor of the coax goes to the vertical radiator and the braid to the earth or radials.

With careful construction you should not need an antenna tuner for 80 and 40 metres but you might need a simple 'T' match tuner for 20, 15 and 10. An MFJ or Emtron unit would be fine or, of course, you can build your own.

One thing you will need is a good earth. If you ground mount the vertical section, two or three well spaced ground rods plus a few radial wires should suffice. If you mount the vertical on the roof, say with a TV mount on a chimney, then you will need three or four 10 metre radials draped over the roof.

By now you have probably realised that this antenna is, in fact, half a trap dipole antenna. The big advantage is that a fair section of the antenna is vertical which ensures a low angle of radiation.

Going back to the comparative tests you will note the superior performance on 40 metres. Now, one more suggestion. If you wind an 80 metre trap, put it at the end of the existing antenna, then add enough wire to resonate at 160 metres, you will cover most HF bands.

If you have limited space, this antenna is for you. If you have plenty of space and are looking for excellent performance, then this antenna is still for you. Give it a try, you won't be disappointed.

Perhaps we might even be able to enthuse one of those big scoring radio clubs to organise a few antenna tests during the next field day and, of course, write up the results for *Amateur Radio*.

And so, for now, its goodbye from me and goodbye from me.

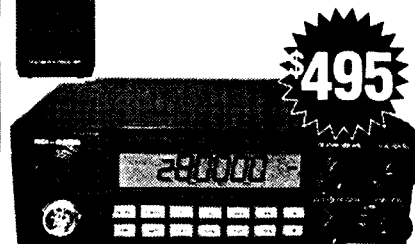
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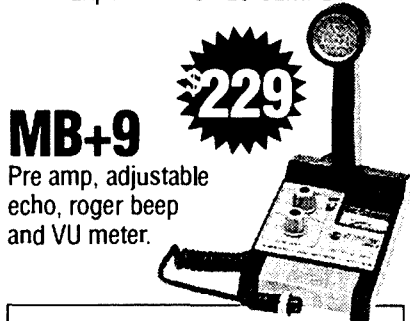


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History

“Winnie the War Winner”

Reprinted from *SIGNALS - Story of the Australian Corps of Signals*

(Editor's note. This is one of the classic radio stories to emerge from World War II. It was first published in QST long before the war ended (August 1943, page 20) but the version reproduced here comes from a book published by the Australian Corps of Signals. Its hero, Max Loveless, was licensed pre-war as VK7ML and retained this callsign after the war. He died in 1971. We publish the story again, 56 years after the events described took place, to show to later generations how Amateur ingenuity overcame what seemed a hopeless situation.

Thanks to Mike Krochmal VK3KRO for sending this version to

In the dark days of 1942 when the tide of Japanese successes engulfed the islands of the Pacific practically down to the shores of Australia, very few people held out any hope for the troops who formed the garrison of Portuguese Timor. No word from them had reached the mainland for fifty nine days and yet during that time the tiny force of less than 400 men had been waging a ceaseless and successful war of their own against some 15,000 crack Japanese troops. They continued to do so for almost twelve months altogether.

When the Japanese landed at Dilli on the 19th of February, twenty men of the 2/2nd AIF Independent Company managed to blow up the airstrip and fight their way back into the hills to join the other units of the garrison in a bitter guerrilla war against the enemy despite the fact that contact with the mainland had been severed.

It was vital to re-establish communications with Australia and it was for

this purpose that men of the Independent Company, the Fortress Signals section on the island and members of Signals 8 Aust Div pooled their resources to build a wireless set which would be capable of raising Darwin. They had to start from scratch without spare parts or new batteries. The sets they had were too weak; scrounging, the recovery of buried and damaged equipment and raids by fighting sections into enemy camps for materials all played part in the construction of the set which finally saw the light of day and served the Commandos well and faithfully under the name of “Winnie the War Winner”.

The first plan was to build an oscillator with a stage of amplification to work on the frequency previously used in communication to Australia.

Without a receiver and with no instruments this was a tall order, but under Capt George Parker (Signals 8 Aust Div) four men - Cpl John Sargent and L/Cpl John Donovan (2/1st Fortress Signals Section) and Sigmn Max (“Joe”) Loveless and K Richards (2/2nd Independent Company) - tackled the job. Loveless in civil life had been a technician with 7ZL Hobart.

He started by building a transmitter, using a crystal which by luck was close to the required frequency. Power supply became a problem and the couple of available accumulators were nearly flat. News was received of a charging plant in a nearby village and off went the accumulators under escort to be charged. This procedure occurred quite a few times until it was managed to make what naturally became known as a “boong” charger. This instrument of native torture consisted of a system of wheels, a belt driving a motorcar generator and, as the name implied, was turned by the natives. Their enthusiasm



A sketch from *SIGNALS* of the commandos at work constructing “Winnie”

for the job fluctuated and so consequently did the charging rate.

A broken-down 109 set was discovered and the transmitter was stripped for parts to provide an additional amplifier for the oscillator - more punch, stronger signals, better chance of being heard.

Three days after they had commenced to construct the new set, a Dutch sergeant stumbled into the camp with what he thought was a transmitter-receiver. It proved to be nothing more than the usual commercial medium-wave receiving set and out of order, too. The sergeant's effort in carrying this set over forty miles through some of the worst country in the world was not in vain for there were many good parts in it which could be used in the new set.

Loveless planned to build a transmitter, powerful enough to reach Darwin, from all the spare parts on hand. He planned the circuit and asked all the commandos to keep their eyes open for any parts that might be at all useful. Cpl Donovan went on a scrounging trip to Attamboa, on the north coast, and returned with the power pack from a Dutch transmitter, two aerial tuning condensers, some sixty feet of aerial wire and a receiving set.

The task of building "Winnie" went ahead without delay. Coils were wound on bamboo formers, accumulators were recharged, points were soldered and valve sockets were made. Just about everything had to be guess work in the absence of precision tools and instruments, even to the perusal of a Portuguese radio manual to determine the colour code of resistances and condensers. A battery charger was recovered from the enemy when fourteen Commandos went through the Japanese lines to the old Australian HQ at Villa Maria. Only a hundred yards from the Japanese they dug up a charger which had been buried there when the HQ had been forced to move.

The set was ready to go on the air by the 13th of April when the operator tried to raise Australia with "CQs" and "Xs" but no reply was heard. Turning the dial of the receiver, the sounds of music floated into the small shack. Some troubadours were amusing the listening public with a song about "The Last of the Hill Billies". The transmitter was revised and on the 18th of April another attempt was made to contact the mainland. No reply was

received but the disappointment of the men would have been allayed had they been aware that their signals had been picked up and passed on to Darwin. All Australian transmitting stations were warned to keep off the air and listen for Timor on the following night.

Some days prior to the 19th of April the HQ of "Sparrowforce" (as the Commandos were known) had given the operators a couple of encoded messages "just in case". On that fateful night, "Joe" Loveless tuned up the rig and everybody stood by listening to the chosen group. With suppressed excitement the "brass was pounded" and the highest priority put into the call. The operator was prepared to do this for a couple of hours but a hefty answering signal came back in reply. He

On the following night contact was established again but this time Darwin was suspicious . . .

was so nervous that he could not tap out the answer fast enough. Although he did not know it, all Australian stations on the group were ordered to stand by and after some hours the messages were passed. A tin of Australian tobacco which had been kept for such an occasion was opened in celebration and a toast in coffee was drunk to "Winnie".

On the following night contact was established again but this time Darwin was suspicious and demanded proof of the guerrillas' identity. Questions and answers were flashed across the Timor Sea:

"Do you know Jack Sargent?"

"Yes, he is here."

"What rank? Answer immediately."

"Corporal."

"Bring him to the transmitter."

"What is your wife's name, Jack?"

"Joan."

"What is your street! And house number?"

The correct answers were flashed back and the mainland accepted the fact that

the Australians in Timor were still alive and fighting. Strengthened by the assurance that their homeland was making every effort to help them, the men in Timor fought on. They lived like natives, scrounged their food in the villages, outfought the Japanese and mocked the surrender notes with which the enemy regularly assailed them. The Japanese commander paid them a hard-won tribute when he said: "You, alone, do not surrender to us."

On the 26th of April, an Allied plane came over searching for the party but missed the smoke beacons. It returned just on dusk the following night and dropped parachutes with precious food and stores. Bush wireless took up the glad news and men who had been going barefooted to save their boots for more active work were issued with new pairs. It was then that all knew that "Winnie" had made good.

The mainland wasted no time in asking for bombing targets which were promptly and happily supplied. The men then enjoyed the sight of Allied bombers passing overhead on their way to give the Japanese a taste of their own medicine. A remarkable instance of co-ordination occurred when interference halted a message regarding bombing targets that was being passed one night to Darwin. When conditions improved at 7 o'clock the next morning, the message was completed. As the operator was receiving an acknowledgement from Darwin, our bombers were overhead on their way to the target. On another occasion, an enemy convoy of three ships was sighted and a message promptly despatched to the mainland. The RAAF sank all three and relieved an ugly situation.

"Sparrowforce" took fresh heart from such things. The men realised that they were no longer a lost unit but another link in the chain that was then being welded for the final overthrow of the enemy.

"Winnie the War Winner" did noble work and as a fitting climax to a useful career guided the rescue party that eventually took the guerrillas home from Timor.

This weird but wonderful set now resides in the Australian War Memorial where it occupies an honoured place as a relic of the ingenuity of signalmen in the face of odds and difficulties.

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Russian/CIS Prefixes Are Not That Simple!

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There was a time, not so long ago, when we could look at certain Russian/CIS prefixes and be left in no doubt of the DX country they represented. Not any more!

Of course, some have not undergone any change, such as our old friends UH/RH Turkestan, UI/RI Uzbek, UJ/RJ Tadzhiik and so on. But even here, with the fairly recently introduced R prefix, we can face some problems of identification.

All UG prefixes (so far) are Armenian, but not all RG ones (RG4C is European Russia). Prefix UM indicates Kirghiz but not all RM prefixes (RM30 is European Russia and RM20 is Belarus). Even UY (Ukraine) can indicate European Russia (UY4L). The very common prefix UB (Ukraine) can indicate European Russia (UB6G), although RE still stands for Ukraine.

We always knew that some prefixes could indicate more than one DX country. The UK2, UK6 and UK8 series of prefixes each can represent at least four different countries. For example, UK8A = Uzbek, UK8B = Turkistan, UK8E = Turkoman and UK8J = Tadzhiik, but now we must be wary of almost all prefixes and learn what a different letter after the numerical prefix could mean.

So many Russian/CIS prefixes are shared with different countries. Even U5 (Ukraine) is shared with Moldova (U50). The very common UA1 (European Russia) is shared with Antarctica and Franz Josef Land. Prefixes UR1, UR2 and UR50 are Estonian, but other UR prefixes, including UR0, are Ukrainian.

Add to these difficulties the fact that the same letter/numeral prefix may

indicate more than one country, and one wonders about the system being used in prefix allocation. Thus prefix EK3A can be both European Russia and also Belarus. Prefixes EM0C and EM3A can be both Asiatic Russia and Belarus. Prefix EX0A can be either Asiatic Russia or Kirghiz, and even 4K2A can be either Latvia or Lithuania. The list goes on and on.

How have these facts been ascertained? By first hand observation of QSL cards actually in the WIA QSL collection.

The National QSL Collection probably possesses the world's largest collection of prefixes. Special attention has been given to recording all the Russian/CIS prefixes composed of the initial letter (or letters) followed by each numeral and each following letter (frequently used as an Oblast indicator).

Approximately 2,100 different prefixes have been indexed in this way. The list is being added to as new prefixes come on the air. The rate at which this occurs has increased enormously since the years of independence (1989-1991) gained by the Republics of the former USSR. For this reason, the Collection welcomes modern QSL cards as well as those of historical importance.

If you are in a position to assist with a donation of QSLs this would be appreciated. It is hoped that when an even more complete picture emerges of the Russian/CIS prefix system, a list can be published which will be of considerable assistance to radio amateurs who have a particular interest in this aspect of amateur radio.

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ALARA

Sally Grattidge VK4SHE

ALARA Publicity Officer
C/o PO Woodstock, QLD 4816
Tel: 077 788 842
Packet: VK4SHE@VKARAT.#NQ.QLD.AUS.OC
E-mail: rgrattid@ozemail.com.au

VK YL Packet Net

Norma VK6PNS has started a new VK YL packet net. If you would like to join in send a message to VK6PNS@VK6JZA.#PER.#WA.AUS.COM

Several VK YLs have tried, with varying degrees of success, to join the USA YL packet net, and Norma decided it would be good to have something similar here. Packet netting involves sending bulletins, so you send one message which everybody reads, and you get to read all theirs. Personal messages can also be sent, of course, and it is a great way to swap news and meet YLs you may not otherwise hear about.

Welcome New Members

Joy Savill lives in Victoria and is studying for her licence. Don't give up Joy. Unni LA6RHA is sponsored by Gwen VK3DYL.

International Marconi Day

On 25 April, Dot VK2DDB took part in International Marconi Day running the 10 m VK2IMD station. She was worried about a dog-pile, but in the whole 24 hours had only 11 contacts; some of them had to be chased and invited/begged to come to her allotted frequency, 28.570 MHz, so that she could have a "proper" contact with them.

Dot was beginning to doubt the antenna system but then had a few DX contacts so decided it was conditions. This experience has rekindled her interest in working 10 m again which she used to love when she was a Novice; of course it was the peak of the sunspot cycle then too. This was Dot's first time operating a Special Event Station.

Silent Key

Dot VK2DDB first met Daphne (ex VK2-KDX, VK2NXD) when they both sat for the Novice exam at North Sydney TAFE in 1978. Daphne was an avid DXer and, after a contact with Tom Christian on Pitcairn Island, sent her study material over there so his wife Betty could study for her radio licence. Betty is now VR6YL.

Before she took up radio herself, Daphne used to help her OM Nev VK2ZBQ (SK) as he tested and invented antenna systems. Daphne 'gave up' radio and all her clubs when she went blind with cataracts and moved to her son's house to live.

After her eyes had been operated on and she could see again, she didn't like to ask her son to erect antennas in his backyard, so just used a 2 m hand-held. Daphne had kept in contact with many of her DX friends until she went into palliative care at the beginning of the year. Sadly, she died in May.

Belgium Calling

Tiny ON4CAT tells us that the Belgian YL club will be activating the callsign ON50YLC from 1600 UTC on 20 July to 1600 UTC on 21 July on all bands from Broeders Van Liefdestraat, Eeklo (JO11SE). There is a special QSL card and a YL award. For more information send a packet to Tiny at ON4CAT@ON4KTK.WUL.BELE.U

Many and Varied

When a YL is not holding a microphone or tapping a keyboard, she does all kinds of things. This is a list of activities, gleaned from nets and contacts, which appeared in the April Newsletter. Sewing - cross stitch, patchwork, teddy bears, dolls. Knitting, crochet, bobbin lace. Art - watercolours, folk art, oil painting. Woodwork, calligraphy, philately. Gardening, growing flowers and vegetables. Preserving fruit, making jam and pickles. Computers - programming, writing, Internet, satellite tracking. Photography including processing film. Reading, classical music. Sport - golf, lawn bowls, orienteering, canoeing, fishing. Exercise - walking, line dancing, belly dancing. Lapidary, rock hunting, metal detecting. Travel - visiting friends, 4WD clubs, caravans, yachts. Volunteering - committees, stalls, shops.

Some YLs even find time to go to work and raise children.

When YLs do get some time in the shack, you will find them on phone, CW, Packet, DX, ARDF and in contests.

And, of course, they do lunch.

Final

This is my last column as Publicity Officer. Next month Christine VK5CTY will take over, so please send her lots of news. The column has been a bit short on really

**Sign up a new
WIA member
today!**

Radio Theory Handbook

3rd edition for amateur operators

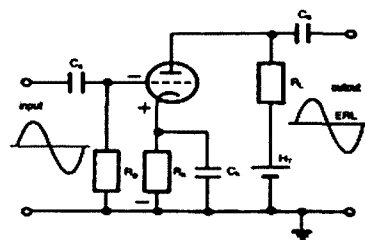
by Fred Swainston

This Australian book has been written in a concise and easy to understand manner to assist those who have no knowledge of radio theory or electronics and to be a useful reference for those working in the radio and electronics industry.

The book covers the ACA syllabus for the Novice and Amateur Operator Certificate of Proficiency.

\$54.95

plus \$3.00 postage and handling



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email: silverdale100@hotmail.com

Radio Theory Handbook

3rd edition for amateur operators

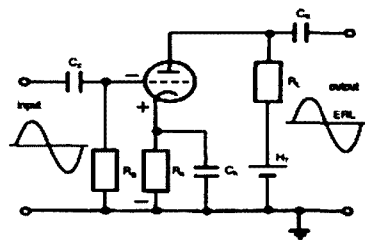
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email: silverdale100@hotmail.com

interesting stories on many occasions, because I can only write about it if I hear about it first.

If you come across anything concerning YLs and radio, spare the time to pass it on to your Publicity Officer. Here are some ideas to get you started.

You take part in a Special Event Station, Convention, Hamfest.

A DX friend sends a letter with news from her part of the world.

You have an interesting contact - not necessarily DX.

You visit a radio friend, or one visits you.

You run a JOTA station, give a talk to a group, school, club.

You are involved in some interesting activity (see list above).

You win an award, get married, give birth, retire, move house.

You go on a DXpedition, or just visit an interesting country.

You go to a YL meet, WICEN exercise (or the real thing).

In the shack, you test a new antenna or rig, build something electronic which actually works, get caught in a wild storm or a bush fire, blow up the computer, burn the toast.

I am sure you can think of lots more - tell us about it.

Many thanks to all those who did send news, and all the readers.

AWARDS

John Kelleher VK3DP
 Federal Awards Officer
 4 Brook Crescent, Box Hill South, VIC 3128
 Tel: 03 9589 8393

I would like to congratulate the organisers of two nets which operate daily, providing much wanted DX contacts. Their operating procedures are most professional, and their controllers are cheerful and helpful. I refer to the ANZA net on 14164 kHz, and to the Down Under County Hunters' net on 14255 kHz which deals directly with those amateurs working for the USCA Award, a most prestigious award sponsored by *CQ Magazine*. It also provides ample opportunity to work US stations for the equally prestigious "Worked All States Award".

The Royal Flying Doctor Service

In an effort to help raise funds for the RFDS, for the past eight years the 28 Chapter (of 10-10) have offered to amateurs and SWLs "The Royal Flying Doctor Service" Award. Applications appear daily from Europe, but few come from VK.

This year marks the 70th anniversary of RFDS and, to mark the event, it had been hoped to have the callsign VI6RFDS. However, it was not to be! Instead, the Chapter has taken out a Club Station callsign which will add interest in the Award.

In future, local members of the 28 Chapter will be able to use the callsign VK6FDS, which will also be used for their regular nets on Sundays at 0210z and 0830z, both on 28560 kHz.

This information was sent to me by Dave VK6ATE.

The Royal Flying Doctor Service Award

This award seeks to recognise the great work being done by the RFDS, and to acknowledge the assistance given, especially in its formative years, by amateur radio operators. Today, many radio amateurs are involved in its operation.

For the Rev John Flynn, the establishment of the Service, in 1928, was the fulfilment of a dream to spread a "Mantle of Safety" over the people of the vast inland of Australia, combining the use of aviation, medicine and radio.

The Rev Flynn maintained that the effectiveness of the Service was 75% due to RADIO. Today, too, the people of the inland areas of our vast continent rely to a large extent on radio to communicate with each other; also the "School of the Air" helps bring education to the children of isolated areas.

The "Twenty Eight" Chapter of 10-10 International offers this award to any radio amateur or SWL in the world.

Requirements

1. The award will be available annually, a new certificate being introduced each year.
2. Originally for contacts on the 10 m/28 MHz band, contacts can now take place on any band and any mode within the limitations of the particular licence holder.
3. Using as many letters as you wish from the prefix/suffix of station callsigns worked/heard from anywhere in the world, make up the words ROYAL FLYING DOCTOR SERVICE. Each callsign can be used only



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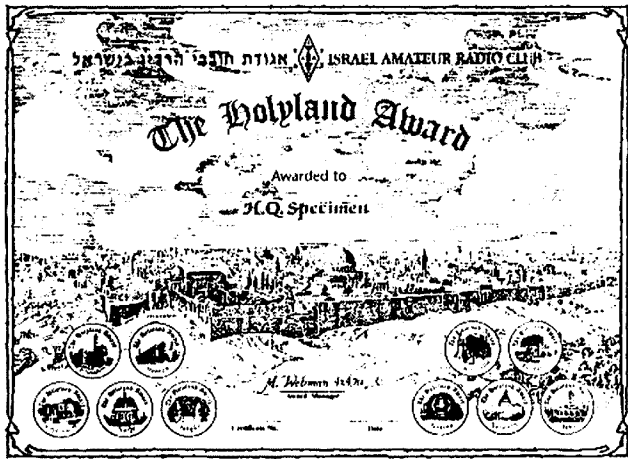
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The Holyland Award
Awarded to
H.Q. Specimen

ISRAEL
4Z9AGH
VLADIMIR GERSHMAN
P.O. Box 3346, Tiberias ilit 14133
CQ - 20 Holyland Area M-06-KT ITU-39

ONCE each year but, of course, can be used in successive years.

If you work/hear a VK station whose operator works for, or relies on the RFDS for normal contact with the world, this can count as an "instant qualifier" for the award. All VK6 stations may be claimed as "instant qualifiers" for the award, no matter what band or mode.

4. List all contacts, including date, band and mode, station worked/heard, location, and letters used. SWLs list (and can use) both stations heard.

5. Cost of Certificates is \$5.00 each (\$AUS in VK, \$US or equivalent for DX stations). Of this \$AUS1, or enough for return air mail postage ONLY will be taken; the remainder will be sent to the RFDS on your behalf. If you wish to donate more to the RFDS, postage only will be taken.

For amounts of more than \$5.00 a receipt will be issued ON REQUEST. Please mark your application accordingly.

6. Post applications to Certificate Manager-RFDS Award, Dave Hanscomb VK6ATE, PO Box 39, Quinn's Rocks WA 6030, Australia.

Germany - DLD Awards

The DLD Award is an official award of the German Amateur Radio Club (DARC) which is available to all licensed amateurs and SWLs. Names of new award holders will be published in the DARC magazine *CQ-DL*.

All members of DARC, and its associate club VFDB and club stations of both organisations, are issued a District Location Code (DOK). To qualify for DLD, applicants must submit QSL cards from licensed radio amateurs, showing a certain number of DOKs worked or, for SWLs, heard.

DLD Award Classes and Modes

1. DLD is issued separately for each amateur band.

2. DLD is issued in different classes on each band as follows: DLD100, DLD200, DLD300, DLD400, DLD500, (with lapel badge), DLD600, DLD700, DLD800, DLD900 and DLD1000 (with engraved badge of honour).

3. For SWLs the awards are known as DLD-SWL 100, DLD-SWL 200, etc up to DLD-SWL 1000.

4. All DLD awards may be issued for mixed modes or may be endorsed for single mode operation providing this is supported by the necessary QSL cards.

Conditions of Issue

1. All modes permitted by the applicant's licence may be used.

2. The initial award is for 100 different DOKs on a single band. For each further 100 DOKs on the same band, the applicant may apply for the next class of DLD. Applicants

may skip levels such as going from 100 to 400.

3. A DOK will only count if the station worked/heard is located in the Republic of Germany at time of contact. Stations only have one DOK and give out only the number they have registered with the DARC QSL Bureau. Special event DOKs will be published in *CQ-DL* Magazine.

Applications for DLD

All valid DOKs are listed in the official DOK List which may be obtained from the sponsor and is used as the application form. A computer generated list will be accepted providing it uses the same format as the application form issued by DARC. It is recommended that you use a separate list for each band. The DOK List costs DM5 or five IRCs plus a self addressed label. Applications must be verified by the applicant's local club or official Awards Manager. Ask for the fee schedule from the sponsor when you request your DOK List. Apply to DARC DLD-Diplome, Postfach 11 55, D-34225 Baunatal, Germany.

Israel - The Holyland Award

Contact at least 100 areas from 13 regions in Israel since 1 January 1992. The country is divided into a series of grids resulting in squares of 10 x 10 km. In addition, the country is divided into 23 administrative regions. The areas that count for the award are a combination of the grid designations followed by the region abbreviation, eg E-14TA (Grid E-14, Tel Aviv). Endorsements are for each additional 12 areas plus one extra region.

A special record book and maps, plus reference material, are available from M Webman 4X4JU, PO Box 8181, 49651 Petah Tiqua, Israel.

The book costs \$US10 and the book plus county road maps is \$US18.

There are three categories for the award depending upon your location.

A : Stations operating in the Holyland.

B : IARU Region 1.

C : IARU Regions 2 and 3.

Basic Award

Category C - work 50 areas in 13 regions. SWL hear 100 areas in 13 regions.

Endorsement Stickers

Six areas worked/heard plus one additional region per sticker.

An annual contest is held in mid-April of each year. Mobile and portables will activate 7060, 14265, 21320 and 28655 kHz. GCR only. The plaque is a gold anodised aluminium sheet 44 x 32 cm, with two colours showing a panorama of Jerusalem from the Mount of Olives. The fee for the plaque is \$US20 and endorsement seals are \$US1.00 each. Apply to Israel ARC, PO Box 17600, Tel Aviv 61176, Israel. ar

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"VK3LZ calling!"

More sound information from your friends at Icom

INTERESTING FEEDBACK ON THE NEW IC-Q7A

"Fox hunting" enthusiasts report that the IC-Q7A with its lightweight portability is the ideal adjunct for this recreational sport. Its small size and excellent sensitivity makes it ideal for "fox hunting" in the amateur band and "DFing" on the commercial side.

SYDNEY ICOM DAY A GREAT SUCCESS

Despite poor weather people turned out in droves to enjoy the hospitality of the friendly and informed staff at Amateur Transceiver Radio Centre. While there they met with representatives from Icom, checked out the latest gear, and managed to pick up some real bargains on Icom amateur and CB equipment. A great day had by all!

COMING EVENTS

Two outstanding events to note on the diary:

Albury-Wodonga Hamfest
Sunday, August 9

Shepparton Hamfest
Sunday, September 13

"...73"

FreeCall 1800 338 915

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Brunswick, Victoria 3056

Tel : (03) 9387 0666

Fax : (03) 9387 0022

ACN 006 092 575

Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaco Street, Mentone VIC 3194
E-mail: vk3did@hotmail.com

Just prior to submitting these notes I had the pleasure of meeting my predecessor, Peter VK3APN. More than ever I realise what a large task he did and did so well! Again our sincere thanks to you Peter. I shall do my best to keep up the standard. Please contact me if I can help. 73 and good contesting.

Ian VK3DID

SEANET '98 WW DX Contest

CW: 0001z 18 July - 2359z 19 July

Phone: 0001z 22 Aug - 2359z 23 Aug

All bands except WARC. Categories are: single operator - single band; single operator - multi-band; multi-operator - multi-band. On CW call "CQ SEA"; on Phone call "CQ SEATEST". For each band exchange RS(T) plus serial number starting at 001 and incrementing by one for each QSO. Contact each station only once per band.

Outside SEANET area stations contact SEANET area only. SEANET area stations will contact all call areas. Contacts between OUTSIDE SEANET AREA stations will not be counted. SEANET area is A4/5/6/7/9, AP, BV, BY/BZ, DU, EP, HL, HS/E21, all JA call areas, JD1, JY, KH2, P29, S21, S79, VK, VQ9, VR2, VU, V85, XU, XV/3W, XW, XX9, YB/YC/YD/YE, ZK, ZL/ZM, 3B6/7/8/9, 4S7, 4X/4Z, 8Q7, 9K2, 9M2/6/8, 9N1, and 9V1.

Score one point for each QSO. Multiplier is three points for each country worked. Final score is total QSO points times multipliers.

Signed logs must show claimed scores band by band, plus total score. Send to: SEANET Contest Manager, Eshee Razak 9M2FK, PO Box 13, 10700 Penang, Malaysia.

Southside Amateur Radio Society 1998 Sprints

25 July, Sat 0000z - 0020z 10/15 m,

1000z - 1200z 80 m (Phone)

1 Aug, Sat 0000z - 0020z 10/15 m, 1000z

-1200z 80 m (CW)

The South Side Amateur Radio Society is pleased to announce its first contest for 1998.

This is a Sprint, with the SSB section on

Contest Calendar July - September 1998

Jul 1	Canada Day (CW/Phone)	(June 98)
Jul 4	Australasian Sprint (CW)	(June 98)
Jul 4	Jack Files Memorial Contest (CW)	(June 98)
Jul 4	NZART Memorial Contest (Phone/CW)	(June 98)
Jul 11	Australasian Sprint (Phone)	(June 98)
Jul 11	Jack Files Memorial Contest (Phone)	(June 98)
Jul 11/12	IARU HF Championship	(June 98)
Jul 18	South Pacific 160 m Contest	(June 98)
Jul 18	Colombian DX Contest (CW/Phone)	(June 98)
Jul 18/19	SEANET 98 (CW)	
Jul 24	80 m 'Zip' Contest (Phone)	(June 98)
Jul 26	Waitakere 80 m Phone Sprint	(June 98)
Jul 25	SARS Sprint (Phone)	
Jul 25/26	RSGB IOTA Contest	(June 98)
Jul 31	80 m 'Zip' Contest (CW)	(June 98)
Aug 1	SARS Sprint (CW)	
Aug 1	Waitakere 80 m CW Sprint	(June 98)
Aug 1/2	YO DX Contest	
Aug 8/9	Worked All Europe (CW)	
Aug 15/16	Remembrance Day Contest	
Aug 15/16	Keyman's Club of Japan (CW)	
Aug 22/23	SEANET '98 (Phone)	
Sep 5/6	All Asia DX Contest (Phone)	
Sep 5/6	Bulgarian DX Contest	
Sep 12/13	Worked All Europe (Phone)	
Sep 19/20	SAC DX CW	
Sep 26/27	SAC DX Phone	
Sep 26/27	CQ WW RTTY DX Contest	

Saturday, 25 July, and the CW section on Saturday, 1 August. These dates have been chosen to coincide with the New Zealand Waitakere Sprint on 80 m.

The objective is to make as many contacts between VK, ZL and P2 stations as possible, with additional incentives for working Novice stations.

Categories are: single operator; multi-operator and SWL. Use 10, 15 and 80 m only. To utilise better propagation, the operating time for 10 and 15 m is 0000-0200z, and for 80 m is 1000-1200z.

Each session consists of two one-hour blocks. Stations can be worked once per block providing that such contacts are not consecutive, or unless five minutes have elapsed since the previous contact with that station.

Exchange RS(T) and serial number starting at 001. To assist identification, club stations must follow their serial number with "Club" or "C" ("Club" includes multi-operator). Portable and mobile stations must identify in the usual manner as /P or /M.

For each completed contact with a non-Novice, score three points on 10 m, two points on 15 m, and one point on 80 m. For contacts with Novice stations, multiply the above points by two.

The multiplier for each band is the total number of VK, ZL and P2 call areas worked

(P2 is one call area), plus club, mobile and portable stations. Final score is total points times multipliers from each band.

Transmitting logs must show the date, time (UTC), band, callsign, numbers sent and received, points, and multiplier/s. SWL logs should show the callsign of the station heard, the callsign of the station worked, and serial numbers sent and received. Separate logs are required for each section.

Attach a summary sheet to each log showing mode, callsign, name, address, type of station (club, mobile, portable, Novice, etc), scoring calculations, and a signed declaration that the rules and spirit of the contest were observed.

Club/multi-operator entries should list all operators. Send your logs to: SARS Contest Manager, PO Box 294, Woodridge QLD 4114, Australia to arrive by the last mail on Monday, 31 August 1998. Alternatively, logs (in ASCII format) can be sent by packet to VK4WSS@VK4PKT.#BNE.QLD.AUS.OC. Logs received by packet will be acknowledged.

Certificates will be awarded to the three highest scores; leading club station; leading mobile/portable station; leading Novice; leading SWL. Special certificates will be awarded to the VK and ZL with the highest total score for CW and Phone combined.

Worked All Europe DX Contest

8/9 Aug (CW), 12/13 Sep (SSB), 7/8 Nov (RTTY); 0000z Sat - 2400z Sun

The object is to work European stations (except in the RTTY section where anyone works anyone). Bands are 80 - 10 m. In the contest, avoid 3550-3800 and 14060-14350 kHz on CW, and 3650-3700, 14100-14125 and 14300-14350 kHz on SSB. The minimum time of operation on a band is 15 minutes, although bands may be changed within this period if, and only if, the station worked is a new multiplier.

Categories are single operator all bands; multi-operator single transmitter; and SWL all bands. DX cluster support is allowed. A maximum of 36 hours is allowed for single operator stations, with up to three rest periods (mark them in the log).

Exchange RS(T) plus serial number. Additional points can be gained reporting QTCs as follows: after working a number of European stations, details of those QSOs (ie QTCs) can be reported during a current QSO with a European station. In the CW and Phone sections, QTCs are sent from non-European stations to European stations. In the RTTY section, QTCs can be sent to any station, including non-Europeans, outside one's own WAC continent. A QTC contains the time, callsign and QSO number of the station being reported, eg "1307/DA1AA/431" means you worked DA1AA at 1307z and received serial number 431. Commence QTC traffic by sending the QTC series and number of QSOs to be reported, eg "QTC 3/7" indicates that this is the third series and that seven QSOs will be reported. A QSO may be reported only once and not back to the originating station, who can be worked more than once to complete the quota. Only the original QSO, however, will have points value.

The multiplier on each band equals the number of European countries worked on that band (or on RTTY only, the number of DXCC/WAE countries), times a band factor. The band factors are four for 80 m, three for 40 m and two for 20/15/10 m. Add the band multipliers together and multiply by the sum of (QSOs + QTCs) to obtain the final score.

SWLs may log each station heard, European and non-European, once per band. Logs must contain both callsigns and at least one of the control numbers. Count one point for each station logged and one point for each complete QTC received (max 10 per station). It is possible to claim up to two multipliers per logged QSO.

Use standard log summary sheet format. Include a check list for more than 100 QSOs on any band and, if more than 100 QTCs have been sent, include another check list to show that the quota of 10 QTCs per station is not

exceeded. Logs can be submitted in ASCII on DOS disc, providing a paper summary is included. Send logs to: WAEDC Contest Committee, Box 1126, D-74370 Sersheim, Germany. Deadlines are 14 Sept (CW), 14 Oct (SSB) and 14 Dec (RTTY).

European countries are: C3 CT1 CU DL EA EA6 EI EM/N/O ER ES EU/V/W/ F G GD GI GJ GM GM(Shetland) GU GW HA HB HB0 HV I S IT JW (Bear) JW (Spitzbergen) JX LALX LYLZ OE OH OH0 OJ0 OK/L OM ON OY OZ PA R1/FJL R1/MVI R/U (RUSSIA) RA2 S5 SM SP SV SV5 (Rhodes) SV9 (Crete) SV (Mt Athos) T7 T9 TA1 TF TK UR-UZ (Ukraine) YL YO YU Z3 ZA ZB2 1A0 3A 4U (Geneva) 4U (Vienna) 9A 9H.

Keyman's Club of Japan (CW)

15/16 August, 1200z Sat - 1200z Sun

This contest is designed for CW enthusiasts and will particularly suit those who are collecting Japanese prefectures for awards.

The name of the winning Division each year is also inscribed on the trophy...

The only category is single operator multi-band. Suggested frequencies are: 1908-1912 (split), 3510-3525, 7010-7030, 14050-14090, 21050-21090 and 28050-28090 kHz. Exchange RST plus continent code (OC). JAs will send RST plus district code.

Score one point per QSO. The multiplier on each band is the total number of JA districts (max 62 per band). Final score equals total points x total multiplier. Show duplicate QSOs with zero points. Attach a summary sheet showing all the usual information and send the log to: Yasuo Taneda JA1DD, 279-233 Mori, Sambu Town, Sambu, Chiba 289-12, Japan, postmarked no later than 16 September 1998. ASCII logs on DOS disc most welcome.

1998 Remembrance Day Contest

15/16 August 0800z Sat - 0759z Sun Presented by Alek Petkovic VK6APK

Purpose: This contest commemorates the amateurs who died during WWII and is designed to encourage friendly participation and help improve the operating skills of participants. It is held annually on the weekend where the Saturday is closest to 15 August, the date when hostilities ceased in the south-west Pacific area.

It is preceded by a short opening address by a notable personality transmitted on

various WIA frequencies during the 15 minutes immediately before the contest. During this ceremony, a roll call of amateurs who paid the supreme sacrifice is read.

A perpetual trophy is awarded annually to the WIA Division with the best performance. It is inscribed with the names of those amateurs who made the supreme sacrifice, to perpetuate their memory throughout amateur radio in Australia.

The name of the winning Division each year is also inscribed on the trophy, which is presented at the Annual Federal Convention. The winning Division holds the trophy for the following 12 months and receives a certificate. The leading entrants will also receive a certificate.

Objective: Amateurs in each VK call area will endeavour to contact other amateurs in other VK call areas, P2 and ZL, on 1.8 - 30 MHz (10, 18 and 24 MHz excluded). On 50 MHz and above, amateurs may also contact other amateurs in their own call area.

Contest Period: 0800z Saturday, 15 August to 0759z Sunday, 16 August 1998. As a mark of respect, stations are asked to observe 15 minutes silence prior to the start of the contest, during which the opening ceremony will be broadcast.

Rules:

- The contest categories are:
 - High Frequency (HF) - for operation on bands below 50 MHz;
 - Very High Frequency (VHF) - for operation on the 50 MHz band and above.
- Within each category the applicable sections are:
 - Transmitting Phone (AM, FM, SSB, TV);
 - Transmitting CW (CW, RTTY, AMTOR, PACTOR, packet, etc);
 - Transmitting Open (a) and (b);
 - Receiving (a), (b) or (c).
- All amateurs in Australia, Papua New Guinea and New Zealand may enter the contest, whether their stations are fixed, portable or mobile.
- Cross-mode and cross-band contacts are not permitted.
- Call "CQ RD", "CQ CONTEST", or "CQ TEST".
- On bands up to 30 MHz, stations may be contacted once per band using each mode, ie up to twice per band using CW and Phone.
- On the 50 MHz band and above, the same station in any call area may be worked using any of the modes listed at intervals of not less than two hours since the previous contact on that band and mode.
- Both single and multi-operator entries are permitted. To be eligible as a single operator, one person must perform all operating and logging activities, without assistance, using his or her own callsign. More

YAESU VX-1R MICRO DUALBAND HANDHELD TRANSCEIVER

**Wide receiver coverage, leading edge features,
and Lithium Ion technology, packaged for
convenience at a price that will surprise!**

The new VX-1R is one of the world's smallest dualband amateur rigs, sporting a 2m/70cm transceiver with wideband receiver in a case sized just 81 x 47 x 25mm WHD. It has impressive memory and scanning facilities as well as receive coverage of VHF and UHF TV, AM and FM broadcast bands, AM aircraft band and other public service frequencies from 76 to 999 MHz*.

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The VX-1R's extensive memory system provides 291 memory channels, most with Alpha-numeric labelling for easy recognition. A Smart Search™ system allows you to search a portion of a band you define, then loads any active frequencies into 31 special Smart Search™ memories for later inspection (great for finding activity when visiting a new area).

Besides being a fully-featured dual-band amateur transceiver, the VX-1R has extraordinarily wide receiver frequency coverage: you'll also be pleasantly surprised by the great audio on the FM broadcast band. A dual-watch facility is provided - and together with the AM, FM-narrow and FM-wide reception modes - you'll be having fun even when you're not operating on the amateur bands. For selective calling and listening, the VX-1R also includes a CTCSS encoder/decoder and a 104-code Digital Code Squelch (DCS) system as well as a Tone Search facility for both CTCSS and DCS encoded transmissions.

A great range of accessory lines for the VX-1R are available such as speaker/mics, a carry case, as well as a battery holder for 1 x AA alkaline battery which includes an inbuilt voltage step-up converter. Computer programming of the VX-1R is available via the optional ADMS-ID programming kit.

So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

D 3665

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VX-1R shown full size

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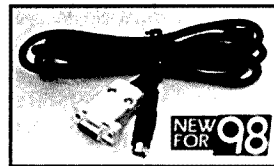
An advanced way to program many of the functions of Yaesu handheld and mobile transceivers. Each package consists of an interface that plugs into the serial port of a PC and connects to the transceiver via its microphone socket (for handhelds) or its Packet socket (for mobiles). Also provides easy-to-use 3.5"(inch) PC software with pull down menus that allow for programming and naming of memory channels, selection of output power, CTCSS tones, scan and battery saver operation, plus much more.

ADMS-1D suits FT-10, 11R, 50R/RD, 51R, VX-1R D 3753

ADMS-2D suits FT-3000M, 8000R, 8500, 8100R D 3759

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NEW FOR 98



Revex W570 HF/VHF/UHF SWR/PWR Meter

Top of the line performance! The W570 provides switchable 1.6-160, 400-525, 700-1100, and 1240-1300MHz coverage, with measurement of 3 power levels (5, 20, 200W) and SWR. External UHF sensor uses N-type sockets, remote mounting for easier cable connection to meter. Measures 120 x 80 x 155mm.

D 1377

\$299



FT-50RD 2m/70cm Handheld

The Yaesu FT-50RD is an amazingly compact 2m/70cm Amateur band handheld transceiver which provides MIL-STD 810 shock and vibration resistance, super wideband receiver coverage, simple menu settings for most functions, and compatibility with the optional Yaesu ADMS-ID software/interface package for PC programming of many functions.

Other features include:

- Tx 144-148MHz, 430 - 450MHz
- Rx 76-200, 300 - 540, 590 - 999MHz (cellular blocked)
- New FTT-12 keypad provides Digital Voice Recording, DTMF paging, CTCSS/DCS scanning, and CTCSS encode/decode
- 2m/70cm RF output: 2.5, 1.0, 0.1W standard, up to 5W with 9.6V battery or adaptor
- "Omni-glow" LCD screen for easier night-time viewing
- 112 memory channels with 4 character alpha-numeric naming
- High speed scanning, 12V DC socket, Digital Code Squelch
- Dual watch allows monitoring of sub-band activity

- Direct FM modulation for better audio quality
- 5 battery saving systems (includes Rx and Tx Save, and Auto Off)
- Rear panel clamshell battery pack
- Comes with FNB-40 slimline 6V 650mA/H Nicad battery pack, flexible 2m/70cm antenna and modified M-9626 AC plugpack adaptor for Nicad charging

D 3660

2 YEAR WARRANTY

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BONUS OFFER! Pay only half-price for a second Nicad pack when purchased with the FT-50RD. Limit one per customer. Applies to FNB-40, 41, 42 only.

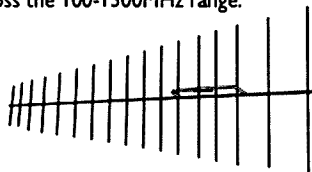
LP-1300 Log Periodic Yagi

The Maldol LP-1300 is a Log Periodic Yagi beam antenna designed to provide useful gain across the 100 to 1300MHz range. Ideal for scanner enthusiasts and ham operators needing a directional wideband antenna. Consists of a 17-element Yagi with a special feed system providing low SWR (less than 2.0:1) across the 100-1300MHz range.

Gain: 6.0dBi to 10.0dBi
 Boom length: 1.46m
 Suitable mast: 28-60mm diameter
 Max wind speed: 40m/sec
 Connector: SO-239

D 4828

\$249



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than one person can use the same station and remain a single operator, providing that each uses his or her own callsign, submits a separate log under that callsign, and does not receive operating or logging assistance from anyone else during the contest.

9. Multi-operator (club) stations may be operated by any number of people, but only one person may operate at any one time, ie no multi-transmission.

10. For a contact to be valid, numbers must be exchanged between the stations making the contact. The number will comprise RS(T), followed by three figures commencing at 001 for the first contact, and incrementing by one for each successive contact.

11. Contacts via repeater (including satellite) are not permitted for scoring purposes. Contacts may be arranged through a repeater. The practice of operating on repeater frequencies in simplex is not permitted.

12. On all bands except 160 m, score one point per completed contact, and on 160 m score two points per completed valid contact. On CW, score double points.

13. Logs should be in the format shown below, and accompanied by a summary sheet showing the following information:

Callsign:
Name: Address:
Category (HF or VHF):
Section (Phone, CW, Open or Receiving):
For multi-operator stations, a list of the operators:

Total Score:
Declaration: "I hereby certify that I have operated in accordance with the rules and spirit of the contest."
Signed: Date:

14. Entrants operating on both HF and VHF are requested to submit separate logs and summary sheets for both HF and VHF.

15. VK entrants temporarily operating outside their allocated call area, including those outside continental Australia as defined for DXCC, can elect to have their points credited to their home Division by making a statement to that effect on their summary sheet/s.

16. Forward log/s and summary sheet/s to: RD Contest Co-ordinator, A Petkovic VK6APK, 26 Freeman Way, Marmion WA 6020. Endorse the envelope "Remembrance Day Contest" on the front outside. Entries MUST be forwarded in time to reach the Contest Co-ordinator by Friday, 18 September 1998.

17. Certificates will be awarded to the leading entrants in each section, both single and multi-operator, in each Division, P2, and ZL. Entrants must make at least 10 contacts to be eligible for awards, unless otherwise decided by the Contest Co-ordinator.

18. Any station observed as departing from the generally accepted codes of operating ethics may be disqualified.

Determination of Winning Division:

Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7, and the scores of VK9 stations will be credited to the mainland VK call area which is geographically closest. The scores of P2, ZL and SWL stations will not be included in these calculations.

For each Division, an "improvement factor" will be calculated as follows:

(a) For transmitting logs only, HF and VHF "benchmarks" for each Division will be established, against which its performance for the current year is judged. The same formula will be used for HF and VHF, inserting the HF or VHF figures as appropriate:

$$B = 0.25P + 0.75L$$

where B = this year's benchmark, P = last year's total points, and L = last year's benchmark.

(b) For each Division, HF and VHF Improvement Factors will then be calculated. Once again, the same formula will be used for HF and VHF, inserting the HF or VHF figures as appropriate:

$$I/F = \text{Total points (this year)} / \text{Benchmark}$$

where I/F = improvement factor.

(c) For each Division, the HF and VHF Improvement Factors will then be averaged: Overall I/F = (HF I/F + VHF I/F)/2.

(d) The Division which achieves the highest overall Improvement Factor will be declared the winner.

1997 Benchmarks

These are the total scores which must be obtained by each Division to improve on its results for the previous year:

Div	HF	VHF
VK1	813	260
VK2	4347	74
VK3	4413	11695
VK4	3283	1181
VK5/8	3746	1352
VK6	2959	7078
VK7	1927	190

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Guinea and New Zealand. No active transmitting station may enter this section.

2. Rules are the same as for the Transmitting Section, as applicable.

3. Only completed contacts may be logged, ie it is not permissible to log a station calling CQ. The details shown in the example must be recorded.

4. The log should be in the format shown below.

Example Summary Sheet

Remembrance Day Contest 1998
Callsign: VK1XXX

Name: Joe E Brown
Address: PO Box 123, Farm Orchard, ACT, 2611
Category: HF
Section: Transmitting Phone
Total Score: 515

Declaration: *I hereby certify that I have operated in accordance with the rules and spirit of the contest.*

Signed: J E Brown
Date: 23 August 1998

Example Transmitting Log
Remembrance Day Contest 1998
Callsign: VK1XXX

Time (UTC)	Band	Mode	Call	Nr	Nr	Pts
				Sent	Rcvd	
0801	14	SSB	VK2QQ	58001	59002	1
0802	14	SSB	VK6LL	59002	59001	1
0806	14	SSB	VK5ANW	59003	59001	1
0808	14	SSB	ZL2AGQ	56004	57004	1
0811	14	SSB	VK4XX	59005	59008	1

Example Receiving Log
Name/SWL Nr: L33071

Time (UTC)	Band (MHz)	Mode	Calling	Calling	Nr	Nr	Pts
0801	14	SSB	VK1XXX	VK2QQ	58001	59002	1
0802	14	SSB	VK1XXX	VK6LL	59002	59001	1
0805	14	SSB	VK5ANW	VK1XXX	58011	59003	1
0807	14	SSB	ZL2ZGQ	VK1XXX	57004	56004	1
0809	14	SSB	VK7AL	VK2PS	59007	58010	1

WIA Novice Contest

0800z Sat to 0800z Sun, 20/21 June
Further to the details in *Amateur Radio* for May 1998, I am pleased to advise that the new Manager for this annual contest is Dave Myers VK2RD, 61 Fern Street, Arcadia Vale NSW 2283. Please send logs to him after the event.

Results 1998 RTTY WPX

Presented by W6/G0AZT
Multi-op Single Tx
(Call\QSOs\Points WPX\Score\Award)
VK6GOM (ops VK6GOM, VK6HAJ)
364 1153 198 228294 O C
Plaque

VK5AI	100	315	78	24570	C
VK5GN	68	203	59	11977	

Check Log VK3EBP

Results 1997 SPDX

(Category\QSOs\points\multiplier\score)
VK3CRP MOMB 23 69 16 1104
VK2EKY SOMBCW 56 168 33 5544
VK8AV SOMBCW 55 165 26 4290
VK4TT SO14CW 30 90 20 1800
VK4FW SO14SSB 66 198 33 6534

Thanks this month to VK2VV, VK3BR, VK3APN, VK5OV, VK6APK, W4RA, W6/G0AZT, 9V1UV, IARU, RSGB. ar

ARDF Amateur Radio Direction Finding

Ron Graham VK4BRG

PO Box 323, Sarina QLD 4737
Packet: VK4BRG@VK4BRG.#CQ.QLD.AUS.OZ
E-mail: rongraham@magnet.com.au

ARDF World Championships

The newly formed ARDF USA will have a team competing at the ARDF World Championship which is being held in Hungary from 1 to 6 September 1998.

ARDF in VK

In a recent *Amateur Radio*, I noted the resignation of Wally VK4DO as Federal ARDF Co-ordinator. Wally was, in my opinion, quite suited and qualified to carry out these duties. It is hoped that the WIA can appoint someone to replace Wally as soon as possible. I feel that ARDF in this country will, to a large extent, stagnate until this appointment is made.

Interest in ARDF/Fox Hunting!

There has been some recent useful discussion on the US fox-list Internet reflector regarding various suggestions and experiences that have proven beneficial in getting people interested in, and maintaining that interest, in fox hunting in the US.

The server may be subscribed to at listserv@majordomo.netcom.com with "subscribe fox-list" in the body of the message. Some extracts from that server follow:

We also have a fox-box hidden transmitter which is put out weekly and can be hunted 24 hrs a day. We have 6-10 individuals who hunt regularly as work and other activities allow.

The following tips are offered:

Hunt regularly and often. If folks get fatigued, you can cut back, but keep something going regularly - waiting several months for the next hunt would drive me batty!

Couple the hunting to other activities - eating out at an affordable restaurant and/or a repeater site work party after the hunt are standard activities.

Make sure to help beginners - different folks need different amounts of time to become competent - help them out - tell stories about how even the accomplished hunters were "rookies".

Share new toys and experiences - in the last few years, our group activities have been places to swap stories and info on new equipment such as GPS, mapping software, etc - also experiment with affordable "low end stuff", attenuators, home-brew quads, etc. We also travel to local clubs and tell our tales and give equipment demos.

Throw in a different style of hunt occasionally - as a group or set of teams to an "out of town" hunt, have a mobile fox and track him/her down "on the fly", hunt at night (safety of course is especially important for the latter two activities).

Have simple rules - one of ours is that we have no rules! Actually we do but they are simple and only effect what the fox can or cannot do - limiting radius from start or repeater site - regularity of transmissions, power limitations, public access (no posted land or access fees/toll roads).

Try to be competitive with yourself and not so much with others, unless of course the hunt is billed as a competitive event - in our case we share enough info to get everyone into the local area where there is enough signal to allow the fox to be found by anyone with a simple receiver and no special equipment.

Take pictures and post them on the club Website.

We also hold our hunts on one of the MMRA repeaters - that way listeners and scanner buffs can hear not only the fox but also much of the chatter of the hunters - we have found over the years that we have quite a few individuals who participate as "fans" - many have become active in our club and hunting group.

Talk up the hunts - we announce them along with other club activities on our weekly MMRA Technical Information and Other Stuff Net - one of the highlights being NINOM's "Fox Report".

David KT1X dhcroll@kt1x.ultranet.com

Acknowledgement to David. His e-mail address is included in case a reader wishes to contact him for more information.

From Another Contributor

We had a hunt, a no-holds-barred hunt, that started with a puzzle. To be eligible for the hunt, the team had to solve the puzzle. Upon entry, they were issued with a 6 oz paper cup with sticky tape to attach to the hood of their vehicle. It was filled with exactly 4 oz of blue water. The winner of the first leg (to the first transmitter) was determined by who had the most water left in the cup.

You had one hour to go 13 miles, requiring freeway travel. The winner had less than 1 oz. The hunt continued, more or less like a scavenger hunt for the next four transmitters. The last transmitter ended up in a park with a fine barbecue dinner.

Also we held Sunday afternoon hunts on a repeater input. The transmitter, under manual control, would stand by for emergency traffic, and some normal repeater traffic could go on with an occasional break by the hidden transmitter, but the main point was that the stay-at-homes could communicate with the hunters and help with beam bearings and map readings. It was a community affair. The winning was shared between the first-in hunter and the best home beam bearing. Since you could start anywhere, the same person could and did win both titles. Note that this also trained the home beam readers to a very sharp accuracy which would immediately pinpoint any interference on the repeater.

Dale Hunt Wrote

Some possible reasons for lack of response:

- 1. Inertia.*
- 2. Afraid they won't be good at it.*
- 3. They don't know how.*
- 4. They don't have the specialised equipment.*
- 5. They don't know how much fun it is.*

The best way I've found to overcome this is to put on a hunt during another ham event. A summer picnic in the park is a great opportunity. Here is what worked for us.

First, use a low power transmitter. Something around 10 to 20 mW can be heard for a couple of hundred metres, but won't overload a hand-held when body shielding, even at three metres. Put it (with legal IDer, of course) in a suitable container to make it reasonably foolproof. I used an old paint can, with a rubber duckie on the lid (if you put the duckie off-centre, you can hold the can by the handle). An On/Off switch on the outside is helpful, but not mandatory.

Now you have a transmitter that anyone can go place in the park, and which is reasonably easy to hunt using body shielding. Get a few people to look for it - don't worry about making a fool of yourself. And have some kids try it; you don't need a license, after all. And don't limit yourself to just one hunt - whoever gets there first gets to hide it next. This way everyone gets a chance to give it a try.

The best recruitment moment for most people is when they find their first transmitter. "Oh! I can do it!" So make it easy, and give them plenty of opportunities. We often had between 10 and 20 hunts in an afternoon, including participation by kids from an adjacent picnic.

If you are trying to get a mobile hunt going, the first problem is lack of equipment. Without a good attenuator, it can get very frustrating. Joe Moell just published a simple attenuator design in his column in 73 Magazine, and I have a similar design (the "Ultimate Attenuator") which has enabled a lot of folks to get started with little investment. I have

done club projects for four clubs, with around 100 built so far. The companion antenna doesn't have to be fancy, either. I use a two element quad made from PVC pipe and wire. Total cost is around \$2 or so, and you can transmit through it for portable operation as well.

The best way for most folks to start is to ride along with someone else who is more experienced. This brings us to the "chicken and egg" problem of how do you bootstrap participation. Get three or four people willing to put together the minimum equipment and do it. Talk about all the fun you are having on the repeater. Write hunt reports for the club newsletters. Invite likely prospects to ride along with you. Build extra equipment to loan out. As Nike used to say, "Just Do It."

Once you get started, probably the easiest way to kill interest is to make the hunts too difficult. Sure, you will hear stories about the transmitter encased in cement in the retaining wall in the freeway divider, and other classic hiding places, but that is NOT appropriate for beginners. Reflections, unfamiliarity with the equipment, putting the antenna on backwards, there are enough problems to make even the simplest hunt challenging when you are getting started.

And, do it often. Once a month barely keeps the interest up if a hunter has had a couple of bad hunts. We used to do a "leapfrog" hunt; the first hunter to find the transmitter went and hid, and when all the hunters got there, they went looking for the next one. You can have four hunts in an evening without being out very late, and everyone gets a chance to find it several times (make sure you congratulate folks on finding it, even if they were not the first ones there!).

Dale WB6BYU e-mail kuon@onlinemac.com

Now from Dave VE1BIP

We had the same situation in our club. There was some interest but no action. It took almost a year of trying but we finally have a core group of five or six teams who hunt weekly. Here are some of things we did/do to get a group started.

1. Hold the hunts frequently. We hunt every Sunday afternoon (Thursday nights in the summer). Hunts usually last an hour and the fox is within about a 10 mile radius. We found people lose interest if the hunts are a month or two apart. We have had hunts with one fox and two hunters. The main thing is to keep it going.

2. One of the things that hindered people at the beginning was the inability to reliably locate the fox. It took a while to figure out what equipment works reliably. For us it was a simple two element quad and an attenuator with a total of 90 dB of attenuation. For a

Pounding Brass

Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

As conditions improve I've been spending a lot more time on the bands, especially 80 metres, assisting new Novice operators with CW techniques and answering any questions they may have.

Some stations I've listened to can greatly improve their operating practices by following some basic rules which will greatly enhance their operating techniques.

The comments and suggestions contained in this column reflect some 15 years experience. You are welcome to accept or reject any comments made.

Listening

Before blindly jumping in and calling CQ, take the time to listen to the band. Firstly, to see if the frequency is in use, and secondly, to see where the majority of signals are coming from. Whether they be local, skip, or overseas DX, you can learn a lot about band conditions by just taking the time to listen.

Filters

Use a 250 or 500 Hz filter. There is nothing worse than listening to four to six times more QRN and QRM than you need to hear. Filters are readily available and can be purchased at a reasonable cost. A good quality filter makes CW operation much more pleasant.

Zero Beat

To zero beat a signal is to precisely determine the frequency on which it is transmitted.

For instance, take a station calling on 3.530

while everybody used the same configuration but now hunters are beginning to experiment with different types of gear. We also have a spare set of equipment that can be borrowed by newcomers. This means they can try out fox hunting for zero investment.

3. Another difficulty we have found is having to sniff out the fox. Make the first several hunts simple by making the fox easy to spot from say 50 to 100 feet or more. As the hunters become more proficient you can conceal the fox more cleverly. Remember,

MHz which I want to contact. The first thing to do is zero beat the signal.

This is achieved by tuning back and forth with the VFO dial until the audio pitch decreases until it disappears at around about 3.534 MHz. This is 0 Hz or what we call zero beat.

Then the RIT or clarifier control is used to alter the received frequency to a comfortable pitch without altering the transmitting frequency of 3.534 MHz (refer to my March column for more information on zero beat).

Multiple Call

When sending a call, stick to the standard 3 x 3 call. Only under good conditions would I ever change to a 2 x 2 call.

When answering a call, most operators send their call only once. I don't recommend this, as it is possible for the station to miss your call, especially if you are off frequency and he is trying to tune you in.

Send your call twice, preferably three times. This gives the other station enough time to tune onto you, especially if you're off frequency. Remember to zero beat him first!

Speed

If you have a tendency to send faster than you can receive, you are going to get caught out sooner or later. The station that answers your call will match your sending speed, which means you will have some trouble in copying him.

One way to slow down your sending is to emphasise the spaces between words. A way in which you can do this is to take your hand off the key at the end of each word.

Once spacing has been achieved with practice, there won't be a need to remove your hand from the key again.

Another problem is answering a station faster than you can receive and expecting him to slow down to your speed. This is pretty unfair and expecting a lot from the other operator. Don't expect too many QSOs if you follow this practice.

Accuracy

Do not make a conscious effort to increase your sending speed, because receiving and

there is nothing like success to encourage people to return.

4. Many of us include other family members to make it more of a family outing. I frequently bring along my daughter and my nephew and they operate the antenna and navigate. I am the chauffeur. Other people bring along their children or spouses.

5. We always convene after the hunt at the local coffee shop to swap war stories.

ar

sending speeds will increase naturally with time and practice.

Concentrate on sending good quality code with correct spacing, even if you have to send a little slower.

Sending Devices

Don't think about touching electronic keys or semi-auto keys until you have become proficient in the use of the simple hand key. It is easier to achieve proper spacing techniques using a hand key, rather than iambic or semi-automatics which require a lot more practice.

If it is your goal to send at a faster rate, move onto iambic paddles only after you can correctly send 14 wpm or more with the hand key. Most operators operate at anywhere between 15-30 wpm, with some top-notch operators sending 35 wpm plus.

RST

Signal reporting is internationally recognised throughout the world and is known as the RST system (Readability, Signal Strength and Tone).

Each part of the RST system is broken down and given a particular number. For example, readability ranges from one through to five. Each number is then given a particular meaning relating to readability, 1 being the

lowest and standing for "unreadable", whereas 5, being the highest, means "perfectly readable".

This system also applies to Signal Strength and to Tone. Each of these is graded 1 to 9. Most operating manuals contain the RST system, which you should become acquainted with. Don't get into the habit of sending "599" as they do in contests. Be honest with the operator and send what you think is the correct report.

Q-Signals

The Q-Code is a three-letter code used to make statements and to ask questions. If used correctly, quite a lot of information can be passed in the shortest possible time.

You should become familiar with the more common types, as used on the bands today. Also keep a list of Q-codes nearby in case you come across one which is unfamiliar to you.

Summary

We have covered quite a bit this month. Just remember, you don't become a top-notch operator overnight. It takes time and plenty of practice. Learn by asking questions, listen to other operators, and try new techniques until you find the technique that best suits you. ar



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Radio and Communications

INCORPORATING AMATEUR RADIO ACTION AND CB ACTION

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The pace doesn't let up this month! July's R&C has a mountain of things for you to do. There's *three* construction projects and *three* DX columns... will it ever end? Nope! And this month we get to play with Yaesu's new 'do-all' FT-847 on HF, with the all-new HF+6M ATU and a load of Collins mechanical filters!

July's R&C is bulging with news and great stories. Pssst — have you seen R&C since News Desk came back?

- **ANTENNAS:** The D5. A five-band Delta Loop — and you can both afford it and build one yourself!
- **REVIEW:** Yaesu FT-847. An HF masterpiece. How can so little money buy so much performance?
- **THE CONSTRUCTION ZONE:** the VK3AFQ 'comb'. This sneaky gadget puts blips across the spectrum...
- **AS I SEE IT...!** Rob Mannion, G3XFD, Editor of the respected Practical Wireless, has a new column.
- **REVIEW:** Telex Contester operator's headset. Noise-cancelling heads a list of impressive features...
- *As usual, we have our three DX columns, mods and more... the best stories and regulars every month!*

Don't miss out — **RADIO and COMMUNICATIONS** is great reading for amateurs!
Check your local newsagent today!

(PS. We also have the biggest collection of radio-oriented Classified adverts in the country. There's lots of them because they work so well. Ask your newsagent to keep a copy for you each month, or ring 1800 25 2515 for subscription details. Hurry — you might miss something!)

v33e

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

The improvement in propagation will attract more and more DX activity to the bands in the future. During the past years when propagation was on the decline, some of us lost interest in long distance communications. We lost some of our DXers to the lure of packet and the Internet. Others opted for VHF activity, and others again sought safety in chit-chat nets at a precise time of each day on a dedicated band segment of their choosing which they considered to be their own private frequency even when it was in the middle of a band segment constantly visited by DXers.

However, circumstances are changing and DXing is back. The 10.7 cm solar flux is now around the 100-120 mark and, despite the constant fluctuation of the A-index (it reached 83 on 5 May with a solar flux index of 123), DX is getting more plentiful and better. There is an interesting DXpedition almost every second week to some usually isolated part of the world.

For those amateurs who, after years of absence, are coming back into the world of DX, here are a few notes of advice.

The essential part of modern DXing is a very good and effective antenna and earthing system. The ability to work split frequencies is almost a must. Operating procedures have changed in many ways so be prepared to change your old habits. The usual question, "Is this frequency occupied?" is still valid. Listen and listen again, and do not start transmitting unless you are absolutely sure that the frequency is clear.

The same applies to the tuning of your transmitter, tuning your antenna or your amplifier. Move off the DX frequency, tune on a quiet frequency, and then come back for the DX.

Do not be in a hurry to collect a "new one" every day. Courtesy and honing your individual listening skills will get you better results than the use of the "nominal" permitted power of 400 watts, distorted modulation and wide bandwidth, each of which can cause interference to others. Remember the old

saying. Do not do to others what you do not want done to your own signals.

There are many amateurs in Australia who, with the basic power of 100 watts and a simple Yagi or dipole antenna, have worked almost all the 328 entities (formerly countries). Admittedly, it took them twenty years to do so, instead of the one or two years which many of the new generation of DXers hope to do.

Use your full call always despite the bad practice these days of using the "last two". Use the correct ITU prescribed phonetics when identifying your callsign and not the fancy, self-styled, mainly American inspired, nonsense phonetics.

Learn how to use your twin VFOs and to work split frequency. Definitely use correct UTC (GMT) time and date for QSOs. Know the time difference between your local time and the UTC time. Do not use local time in QSOs or on QSL cards. Have two small 24 hour digital clocks in front of you, preferably with different colour displays, one for UTC time, the other for local time.

Please learn again how to keep a correct logbook, date, time, callsign of the QSO partner, operator's name and location, signal reports sent and received, frequency, emission type, power input and azimuth directions of your directional antenna, if you have one. Do not forget to ask, or find out and record the QSL information of your QSO partner.

Practice of the above methods will produce for you the DX that you want. Good luck!

Barry Goldwater K7UGA a Silent Kay

The former American Republican Senator Barry Goldwater died in the USA on 29 May 1998, aged 89.

Barry had held an amateur licence since 1921 and his last callsign was K7UGA. During his political life he was the proposer and motivator behind a number of US laws dealing with Telecommunication, the FCC (the American equivalent of the Australian Communication Authority) and amateur radio. In 1964 Goldwater's Bill to allow reciprocal operating arrangements between the USA and other countries was signed into law. In 1982, the law known as the Goldwater Amateur Radio legislation established the amateur auxiliary and the volunteer examination programs, permitted ten year licence terms and exempted amateur radio from the secrecy provision in the Communication Act. Barry Goldwater was honoured in 1983 by the ARRL as "its governmental protector and advocate" by establishing the \$5000 ARRL Goldwater Scholarship.

At the age of 77 Goldwater led a DXpedition of seven American amateurs in January 1986 to Taiwan. In those days amateur radio in practical terms was a "no

go" zone in Taiwan. There were a few licensed amateurs and less than half a dozen authorised stations, but security was paramount in those days and it was really the luck of the game to have a QSO with the island.

I have a QSL card in front of me. It shows Barry Goldwater in front of a TS-930 and other older type of equipment and the Taiwanese flag on a desk stand. The back of the QSL card says, "US Senator Barry Goldwater K7UGA led a group of Washington DC amateurs to Taiwan the first week of January 1986. The BV0BG station was established in Taipei the capital city with a population of over 2 million persons. Among the 7000 QSOs made all over the world in seven days, were the first ever from BV on 80 and 160 metres. We appreciate the many persons with the China Radio Association who worked with us in the true spirit of international co-operation to ensure the DXpedition's success." Then appears a long list of names and callsigns, all of them officials of the association and/or officials of the controlling Government body. My QSO with Barry (he was at the mike at that time) took place on 4 January 1986 at 0803 GMT on 14 MHz with an SSB report of 59. The card also shows a group picture of the DXpeditioners, all of them in business suits and neckties. This would indicate that, besides the amateur activity, there were other official and non-official meetings between the US group and the Taiwanese authorities. The practical result of this visit came years later when the political climate had changed and the laws governing amateur radio were modernised.

Barry loved amateur radio and he used to say that it "relaxed" him. His memory will live on among those who believe that amateur radio is a great equaliser between nations, races, religions, cultures and individuals, and that it is an excellent tool to foster understanding between people of this "global village" of ours.

Brandon Island - 3B7RF

This expedition left Port Louis, Mauritius on 4 May on a boat to Raphael Island, one of the 22 islands making up the Cargados (St Brandon, IOTA AF-015) Archipelago. The island is a small one, about 200 m wide and 300 m long.

There was not much room for movement. The boat, only 36 metres long, was continually rolling, and almost everybody on board became seasick. The trip took 30 hours. It was the CW station which was first to air on 6 May at around 1330 UTC, but soon afterwards one of the generators failed. Installation of the SSB station was completed on 7 May. They were running two SSB and two CW stations, installed in tents approximately 200 m apart, with 500 watts output

only. A RTTY station came on air a few days later.

Propagation to Europe was excellent and they worked the Europeans for hours. There were only limited openings to the Pacific making the contacts to VK/ZL difficult. The SSB operation was closed down on 16 May and the CW operation closed on 17 May. The DX group made over 53,000 QSOs.

The return journey from Raphael Island to Mauritius was even worse. It was a harrowing 75 hour trip aboard the vessel Umbria II. At one stage the boat had to anchor in a safe harbour.

As postage costs from Switzerland to overseas countries are expensive, the DXpeditioners require two IRCs or two "green stamps" for direct QSLing, otherwise the cards will be returned via the bureau system.

Cards should be sent to the Manager, Postfach (Post Office Box) 37, CH-6319, Allenwinden, Switzerland.

Guest Licence Arrangements

No, I do not want to mislead you. Such an arrangement is not here, in Australia, but it will be soon a reality between the US and the European CEPT administration.

The ARRL, the US radio amateur representative body, has urged the US State Department (Ministry of Foreign Affairs) since 1991 to start negotiations with ERO (The European Radiocommunications Office) for participation in the European Conference of postal and Telecommunication Administrations (CEPT) amateur radio licensing system.

According to the news Bulletin No 13 published by the ARRL, the State Department formally applied for participation last

September. Approval of the US request came late in January this year, at a meeting of the CEPT Radio Regulatory Working Group (WGRR) in Groeningen, the Netherlands. The US FCC (Federal Communications Commission) will be officially notified about this.

Under the arrangement, holders of a CEPT licence can operate in a CEPT participating country without having to apply for a reciprocal licence. In short, US amateurs will be able to operate in most European countries and their dependencies, and European amateurs will be able to work from the USA and its dependencies without a reciprocal licence.

The FCC has already proposed changes to the rules of the amateur radio service to make it easier for amateurs holding a CEPT or an International Amateur Radio Permit (IARP) to operate during short visits to the US.

The arrangement will benefit only full call or VHF privileged amateurs. Novices would not be eligible for a CEPT equivalent licence since most CEPT countries do not offer a licence of this type.

Campbell Island - ZL9

In the May issue of *Amateur Radio* we reported the preparations for the January 1999 DXpedition to this island group. According to the latest news, this activity represents possibly the last chance for many years to come for a QSO with this DXCC entity and IOTA island (OC-037).

The New Zealand Department of Conservation is restricting access to the island and permission to visit the island was granted only because of representation at the highest level of government and continued hard work by the team leader Ken Holdum ZL2HU. The

eleven member team comes from Ireland, Japan, USA, Canada and New Zealand.

They will be active as ZL9CI on all bands and modes from 9 to 25 February 1999.

The total budget for the expedition is in the vicinity of \$US85,000, to which the members of the team have contributed \$US33,000. Donations so far have reached \$US11,000, but almost \$US38,000 is still needed to meet the expected cost of the DXpedition. Donations should be sent to the Kermadec DX Association, PO Box 56099, Tawa, Wellington, New Zealand.

RW1AI Is Closing DXpedition Logs

Mikhail I Piskizjov RW1AI (ex UA1AFM) says that he will close the following DXpedition logs on 31 December 1998. If anyone still needs QSLs please send your cards during 1998 either via the bureau or direct to Box 2, St Petersburg, 195009, Russia.

* K1B Mirny Base, Antarctica - Feb/Mar 1981.

* 4K1D Novolazarevskaya Base, Antarctica - Mar 82/Mar 83 and May/Nov 91.

* 4K1F Bellingshausen Base, South Shetlands - Feb 1991.

* 4K1G Leningradskaya Base, Antarctica - April 1991.

* 4K1AFM Novolazarevskaya Base, Antarctica - May/Nov 1991.

* 4K4AFM Severnaya Zemlya AS-042 - Jan/July 1990.

* 4K0E SP-29 Drifting Station - June 87/ May 88.

* UA1AFM/UA0 Severnaya Zemlya AS-42 - May 84/May 85.

* UA1AFM/UA0B Severnaya Zemlya AS-042 - Oct/Dec 1989.

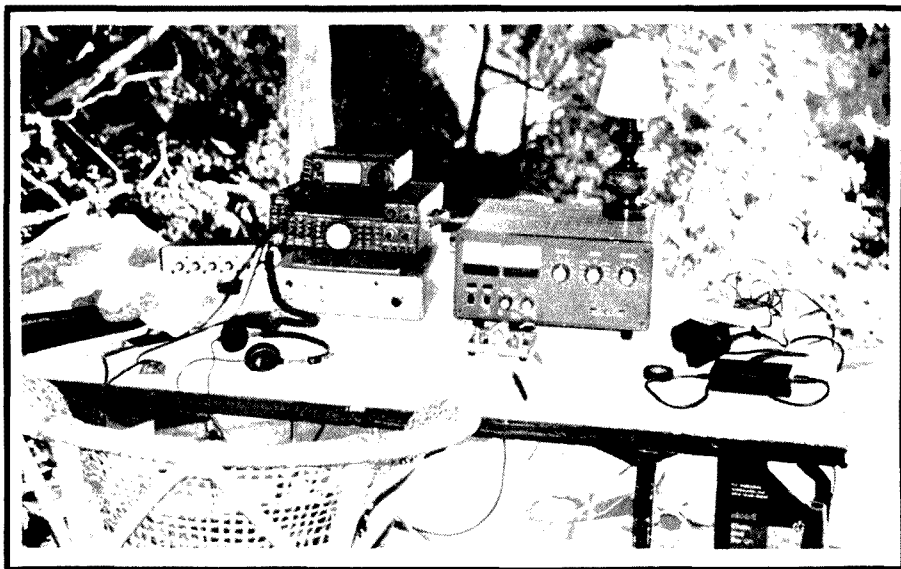
Future DX Activity

* Nepal. Charlie K4VUD will be active as 9NIUD from Nepal at his local sunset and sunrise every day on 14023, 14195 and 14215 kHz, and he will try also 21023, 21295, 7023, 7065 and 3799 kHz as well as the 160 m DX window.

* San Ambrosio. John CEOZAM has advised that his San Ambrosio activity, XQ0X, has been postponed from April/May to September due to transportation problems.

* Baffin Island. Louis VE2BQB will be active on SSB and CW as VE8TA (Zone 2) from the end of May until the end of November. QSL via VE2BQB Louis Paquet, 1368 Rang 4, Lac au Salmon, PQ G0J - 1M0, Canada.

* Rodriguez Island - 3B9. During the Visalia (US) International DX Convention, Frank Smith AH0W/OH2LVG announced that a multi-national group will be active from Rodriguez Island (AF-017) in the northern autumn (Sep-Nov).



The operating desk of H40AB and H44/VK9NS on Pigeon Island, Temotu Province, Solomon Islands.

* **Bhutan 1999 - A51.** Yasuo "Zorro" Miyawaza JH1AJT is organising a team of international operators to conduct a return DXpedition to Bhutan early in 1999.

He first operated from Bhutan in February 1995.

* **Philippines.** Klaus DU1/DL5ZAH will be active from Manila for the next four years. His favourite mode is CW. QSL via DL5ZAH through the German QSL bureau, or direct to Klaus Illhardt, ETSI Technologies Inc, ADB Ave, JMT Bldg, Ortigas Center, Pasing City, Metro Manila, Philippines.

* **Tromelin.** Jacques FR5ZU/T is scheduled to visit Tromelin again, possibly in July.

* **Tristan da Cunha.** Ian ZD9IL operates daily from 0900 to 1600 UTC on one of the frequencies 18135, 14205, 21260, 21295, 24955 or 28490 kHz. Ian listens slightly off frequency, up and down.

Edwin ZS5BBO is the QSL manager. His address is Edwin Musto, PO Box 211032, Bluff, South Africa, 4036. Mail service from the island is very infrequent so you must be very patient and wait for your card.

* **Austral Islands - FO.** Albert FO5JR will leave Tahiti on 20 July and arrive on Rimatara Island (IOTA OC-050) in the Austral Island Group on 22 July. He hopes to start his activity on 24 or 25 July, and will stay on the island until 13 August.

He will use CW only around 14010 and 21010 kHz. He does not like pile-ups and wants a standard QSO. QSL to his home call.

* **Belize - V31.** Stan W5JYK, Wondi K5KR and Mike W5ZPA will be active from 26 to 30 August as V31YK, V31KR and V31MP respectively. QSL to each operator's home call.

* **Hong Kong - VR2.** It was reported that Serge F6BHK will be active as VR2/F6BHK from Hong Kong for the next two years.

* **Algeria.** Afif 7X2RO is active again around 2040-2100 UTC on 17 metres. QSL via F6FNU.

* **Amsterdam Island.** Bernard (ex FB8XW and FB8YI) will be on the island until December using the callsign FT5ZI.

* **Chagos.** The station signing VQ9GB was heard around 1400 to 1500 UTC on CW on 14030 kHz. QSL via K7KG.

Interesting QSOs and QSL Information

* **FR5ZQ/T - Henry - 21000 - CW - 0723 - April.** QSL to Henri Namtameco, Rampe de Saint Francois, 5052 Tour La Chaumiere, F-97400 Saint Denis France.

* **HV4NAC - 14190 - SSB - April.** QSL via IK0FVC via QSL Bureau.

* **KP2AD Lubos - 14195 - SSB - 1031 - April.** QSL via OK1AUU via QSL Bureau.

* **YS1RR - Raymondo - 14235 - SSB - 0630 - May.** QSL via DJ9ZB, Franz Langner,

Benfelder Str 4, D-77955, Ettenheim, Germany.

* **H75A - Mike - 14260 - SSB - 0616 - May.** QSL via N5FTR William M Loeschman, 717 Milton, Angleton, TX 77515, USA.

* **CU3DJ - Marco - 14260 - SSB - 0512 - May.** QSL via the Portuguese QSL bureau.

* **4S7RO - Ron - 14210 - SSB - 1200 - May.** QSL via the QSL Bureau or direct to J Rohan A Goonetilleke, 298 Kolamunne, Piliyandala, Sri Lanka.

* **FT5XN - Helios - 14024 - CW - 0545 - May.** QSL via F6PEN, Gerard Ribes, 16 Rue Violet Le Duc, Toulouse, 31100, France.

* **3B7RF - 14195 - SSB - 0439 - May.** QSL via HB9RF, PO Box 37, CH-6319, Allenwinden, Switzerland.

* **EG4ITD - 14011 - CW - 0543 - May.** QSL via the Spanish Bureau to EA4RCU.

* **CO6LG - Logio - 14192 - SSB - 0508 - May.** QSL via PO Box 1 Venegas, 64180 Cuba.

* **XM7P - Scott - 14160 - SSB - 0514 - May.** QSL via VE7ARS via the QSL Bureau.

From Here And There And Every Where

* It was interesting to read an article by Richard Macey in the Sydney Morning Herald of 30 May 1998 discussing everyday life on the MIR space station.

He quotes a letter entitled "A Typical Day on Space Station MIR" posted on NASA Internet written by the Australian born astronaut Dr Andrew Thomas VK5MIR/KD5CHF.

According to the article, Dr Thomas, who holds dual US and Australian Citizenship, should land at Cape Canaveral on 13 June.

He is the seventh and last NASA astronaut to live aboard the 12 year old MIR.

* **Guatemala.** Franco TG9NX reports that he wants his cards to be sent via N4FKZ, as the Guatemalan QSL Bureau is not functioning at all.

* **SV2ASP/A Monk Apollo** on Mt Athos reappeared on the 14243 European DX Net and said to QSL direct only to his call book address, and no IRCs, only "green stamps".

* **DH - Germany.** Since 1 May 1998 all "A" class licences (DH) have been automatically upgraded to B class licences and therefore there are many new German DH prefixes on the DX bands. A new "training licence" has been also established, where operation is under the personal control of a tutor amateur, and will carry the prefix DP.

* **The Brazil Net** is now held on Saturday and Sunday at 1300 to 1500 UTC on 28433 kHz and from 1900 to 2100 UTC on 14222 kHz. It is also on air from Monday to Friday from 0900 to 1000 UTC on 14240 kHz.

* **Israeli Amateurs** can add a /50 suffix to their usual callsign until the end of the year to celebrate the 50th anniversary of Israel.

* According to statistics collected by the IARU (International Amateur Radio Union) the number of radio amateurs in the world has reached 2,770,000.

* **The 26th SEANET (South East Asia Net) Convention** will be held in Singapore from 13 to 15 November 1998.

* **French amateurs** are now permitted to operate between 1810 and 1850 kHz in the 160 m band.

* **Jan Mayen.** QSL cards for contacts made with Per JX7DFA can now be obtained from Annar LA2KD who has received the logs.



This "water taxi" and a three hour open sea voyage takes you to Pigeon Island.

***Turkish QSL Bureau.** The new address for the Turkish Amateur Radio Society QSL Bureau is TRAC QSL Bureau, PO Box 699, 80005 Karakoy, Istanbul, Turkey.

* **France.** If you worked some French stations during June or July with the strange prefix of FBC it means that they are celebrating the World Cup activity from 12 June to 14 July.

* **Afghanistan.** YA5MKO was heard in Europe early in May. No further news of its status.

* **Kure.** There is still some confusion about the KH7 prefix which is now used by Hawaii. But, if the first letter of the suffix starts with a "K", ie KH7K, this would be a Kure callsign.

* If you send direct mail to St Helena Island - ZD7, mark the envelope "via Ascension Island". Envelopes not marked as such might go via South Africa and not reach St Helena.

* **Scotland.** GB5HQ will be active in the IARU HF Championships on 11 to 12 July from the location of GM3WOS near Thin in the highlands of Scotland.

* **Nicaragua.** The H75A activity from Isla De Venado (IOTA NA-209) produced 6,914 QSOs in 63 hours of operation.

* **New Zealand.** The recently formed Auckland Contest Club has obtained the special callsign ZM1A for the month of June. The club members are Jacky ZL3CW, Ron ZL1AMO and Mark ZL1BMW.

* **Mongolia.** The Hungarian DX Group did not get permission to use the JH0HA callsign and they had to change their call later from JA1HA to JT1X.

* **Saudi Arabia.** Mike K3UOC, who operated from Saudi Arabia for many years, has now returned to the USA. He made over 110,000 contacts with the callsign 7Z500.

QSLs Received

* D68YV - (3 m - op Chris Zeller, Jaeger Str 19, 8200, Schaffhausen, Switzerland.

* H40AB - (1 m - VK9NS).

* FT5XN - (3 m - F6PEN).

* EL2JR - (3 m - via KB3U Albert J Ramonosky, 10391 Circle Pine Road, North Fort Meyers, FL 33903, USA.

* 8Q7AA - (2 m - N7TXO).

* XW30A - (3 m - SM0DJZ).

Thank You

As always, I am grateful for the assistance given to me by many of you. Special thanks are due to VK2EFY, VK2KFU, VK2TJF, VK2XH, VK4LV, VK5WO, VK9NS, DJ3AS, *The Sydney Morning Herald*, *DXCC News Release*, *Ohio/Penn DX Bulletin*, *QRZ DX*, *The 425 DX News*, *The DX News Letter* and the *DX News Magazine*.

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Spotlight on SWLing

Robin L Harwood VK7RH

5 Helen Street, Newstead TAS 7250

Tel: 03 6344 2324

Packet: VK7RH@VK7BBS.#LTN.TAS.AUA.OZ

E-mail: robroy@tassie.net.au

MUF

Winter is here and radio conditions have changed, with signals more easily observed in the daytime rather than the evening hours. Also, I have noticed that the MUF has dropped down as low as 9 MHz at night, yet in the daytime it can go up as high as 29 MHz. As well, an occasional solar flare disrupts HF communications.

VOA

As mentioned last month, the VOA in Washington DC introduced their new rolling 24 hour news format in English as from 0000 UTC on 29 May. The first major story covered was the Pakistani nuclear detonation and its aftermath. The VOA in their new format can be easily heard in this region. Try 0000-0100, 15185, 15290 or 17735 kHz; 1000-1100, 5985 or 7405 kHz; 1100 onwards, 9645 or 6160 kHz; 2100-2400, 15185, 15290 or 17735 kHz.

There are other channels that may be audible at times, directed to other regions. Although the program is on 24 hours it is not covered continuously on short-wave. Also, if you go to their Website <http://voa.gov> you have the chance to also download the program in Real Audio format. There is also a TV camera that has a still shot of announcers in the studio, with updates every 45 seconds, allowing you to see who is talking.

Radio New Zealand

Radio New Zealand International (RNZI) in Wellington is going to continue for at least another year, following the announcement in their Budget. A grant of \$NZ700,000 will allow it to continue. The lack of a suitable broadcast structure in the Southwest Pacific has meant that many island communities solely rely on RNZI for news, information and particularly weather bulletins.

Indonesia

Indonesia was making the news throughout May and many followed developments via

the National program of Radio Republik Indonesia (RRI) from Jakarta. This is widely heard now in Australia on 15125 kHz from about 2200 until 0700 UTC. There is another network occasionally observed on 15150. The English program from the External service is now on 11785 kHz at 0800 UTC. Some international broadcasters did significantly increase their output in Indonesian. Radio Netherlands and Radio Australia did increase their programming but the Darwin site was not utilised. It is still in mothballs.

Australian Defence Forces' Radio

The Australian Defence Forces' Radio in Canberra is still active. I came across it on 14790 kHz USB at 0430 UTC. I do not know where the senders are but they previously were using the Belconnen facility. It probably was from Northwest Cape (WA). Programming is mainly musical with dedications, and a short news bulletin is heard plus sporting updates.

This station can be classed as a broadcasting station although others maintain it is a utility. It is not a feeder station.

DX Australia

Another Australian DX club has ceased to exist. "DX Australia" had its final meeting on Saturday, 28 June and it no longer publishes its monthly newsletter *DXers Calling*. Membership of all Australian clubs has been steadily falling. Now moves are again being floated for one single national organisation. However, the differences are too wide and the clubs are too parochial to see the benefits of amalgamation.

Technology has also made it increasingly difficult for the average DXer to pursue his hobby. I have heard rumblings from time to time about the horrendous interference from the ever-increasing electronic gadgetry in the general community. Now I am told that overhead cables for Pay-TV are acting as radiators on HF between 0 and 30 MHz. Fortunately, here in Northern Tasmania, no Pay-TV exists but there is talk of a microwave distribution system being established.

I know that hash from overhead cables is a problem in Melbourne and Brisbane. Only one major carrier uses overhead whilst the other player is underground. However, de-scrambler boxes also put out harmonics.

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**Support the WIA in
order to protect
amateur radio
frequencies!**

AMSAT Australia

Bill Magnusson VK3JT
RMB1827, Millawa VIC 3678
E-mail: vk3jt@amsat.org

Six Monthly Update of Amateur Radio Satellite Status

Based on information at the time of writing, here are short summaries of the status of currently operational amateur radio satellites.

RS-12

Uplink 145.910 to 145.950 MHz CW/SSB.
Downlink 29.410 to 29.450 MHz CW/SSB.
Operational in mode A.

RS-15

Uplink 145.858 to 145.898 MHz CW/SSB.
Downlink 29.354 to 29.394 MHz CW/SSB.
Operational. Best on CW mode.

AO-10

Uplink 435.030 to 435.180 MHz CW/LSB.
Downlink 145.975 to 145.825 MHz CW/USB.

Beacon, continuous carrier on 145.810 MHz.
Operating intermittently depending on sun-angle.

AO-27

Uplink 145.850 MHz FM.
Downlink 436.792 MHz FM.
Operational, but I have no reports from VK.

FO-20

Uplink 145.900 to 146.00 MHz CW/LSB.
Downlink 435.80 to 435.90 MHz CW/USB.
Operational in voice JA mode.

FO-29

Voice/CW Mode JA.
Uplink 145.900 to 146.00 MHz CW/LSB.
Downlink 435.80 to 435.90 MHz CW/USB.
Operational in voice JA mode.

KO-23

Uplink 145.900 MHz FM 9600 Baud FSK.
Downlink 435.175 MHz FM.
Operational.

KO-25

Uplink 145.980 MHz FM 9600 Baud FSK.
Downlink 436.50 MHz FM.
Operational.

OSCAR-11

Downlink 145.825 MHz FM, 1200 Baud PSK.
Beacon 2401.500 MHz.
Operational.

OSCAR-16

Uplink 145.90, 145.92, 145.94, 145.86 MHz
FM 1200 bps Manchester FSK.
Downlink 437.0513 MHz SSB 1200 bps
RC-BPSK 1200 Baud PSK.
Beacon 2401.1428 MHz.

Operational.

OSCAR-19

Uplink 145.84, 145.86, 145.88, 145.90 MHz
FM 1200 bps Manchester FSK.
Downlink 437.125 MHz SSB 1200 bps
RC-BPSK.

Operational.

UO-22

Uplink 145.900 or 145.975 MHz FM 9600
Baud FSK.

Downlink 435.120 MHz FM.

Operational.

Satellites normally listed but currently not operational include IO-26, WO-18, DO-17 and RS-16 which are all undergoing testing or re-booting.

Future of the Russian MIR Space Station.

As I write this copy, the Space Shuttle flight STS-91 is docked with MIR for the last time. Andy Thomas is packed, ready to come home. The Russian crew members are looking to make MIR ready for her final few months in orbit.

In fact, the whole MIR saga is drawing to a close. And what a saga it has been for amateur radio!

Who would have thought that a manned Russian Space Station would acquire such a high profile in amateur radio circles. It would be difficult to imagine that any amateur radio operator, anywhere in the world, would not be aware of the activity on MIR.

My latest information is that, when the time comes, MIR's orbit will be allowed to decay and that, after a lot of "flimsy bits" like solar panels and light superstructure have burned off in the upper atmosphere, the bulk will drop into the Pacific Ocean some time later this year or early next year.

That will end an historic period of activity for radio amateurs.

In recent years we have seen visitors from a number of countries take part in the scientific activities aboard the MIR station. Most of these visitors have also been involved in the day to day amateur radio activities on MIR. None has created as much interest here in Australia as the last, Dr Andy Thomas.

Born in South Australia, Andy took out American citizenship to allow him to take part in the astronaut training program. Because of his Australian connections and family in VK5, his stay on MIR has been of special significance to VK amateurs.

Since I started writing this column in October 1991, MIR and its amateur radio role

AMSAT National Co-ordinator

Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org

AMSAT Australia Net

Control station - VK5AGR

Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.

Frequencies (again depending on propagation conditions):

Primary - 7.068 MHz

(usually during summer).

Secondary - 3.685 MHz

(usually during winter).

Frequencies +/- QRM.

AMSAT Australia Newsletter and Software Service

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AMSAT Australia

GPO Box 2141

Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, [ftp.amsat.org](ftp://ftp.amsat.org) and following the sub-directories to "KEPS".

have been the subject of numerous mentions, and rightly so. It has been highly instrumental in popularising amateur radio satellite activity and raising awareness among the general amateur fraternity.

It is not known at this stage when the amateur radio gear on board MIR will be turned off for the last time but one thing will be certain, we will miss MIR.

That's worth saying again... WE WILL MISS MIR! Of course we look forward eagerly to its replacement, the International Space Station. The plans for its amateur radio component are already well underway.

Maggie VK3CFI

Any summary of the amateur radio involvement in the MIR station would be incomplete without mention of Maggie VK3CFI. Known to the Russians as Rita, Maggie pioneered the educational role that was to become such an important part of MIR's contribution to amateur radio.

From her home in Colac, Victoria, Maggie began by making friends with the early Russian crew members. This was aided by her fluency in the Russian language. "Commander Anatolij calling Rita" was a familiar sound in the small hours over Colac in those days.

A high school teacher, Maggie gradually raised the possibility of her students coming to her home to talk to the crew members. This was pretty radical stuff at the time and had to be handled with kid gloves. After the ice was broken she refined her methods to bring satellite studies into her curriculum and the whole notion of "school contacts with MIR" was born.

This has been expanded in recent years to include the various Space Shuttle missions and has even spawned a couple of new "words", SAREX and more recently, MIREX.

Maggie's initial work was done in the days when MIR was in no way newsworthy and was practically unknown to the general public. The small Victorian country town of Colac was probably more widely informed on the goings-on on board the Russian Space Station than any other community outside Star City in Russia.

In the following years MIR has played a major role in Maggie's life. She has been a popular lecturer on the subject and has clocked up many kilometres in travels to radio clubs and meetings, her infectious enthusiasm inevitably leaving her audience resolving to "do something about setting up for MIR".

Her enthusiasm has remained to this day and I'm sure it will be a tearful farewell for her when the big Russian flagship takes its final plunge.

IRIDIUM Satellite Flares

Those of you who have tried watching for visible satellites at night, particularly the easier seen ones such as MIR, Hubble and the Space Shuttles, will have become familiar with the way the brightness can vary as they move across the sky. This is due to the changing sun-angle and the reflection angles relative to the observer.

Motorola's Iridium series satellites have introduced another dimension to this popular pastime. These satellites are seen to produce a brief but dramatic increase in brightness, a "flare", up to -8 magnitude, when the reflection conditions are just right.

The flare occurs when a particular antenna on one of the satellites aligns correctly between your location and the sun. Because these satellites are held in a very stable attitude while orbiting, it is possible to predict when these flares are likely to occur.

Information on this phenomenon is available on the web at <http://www.satellite.eu.org/sat/vsohp/iridium.html> and a prediction program is also available from that site. It has links to other sites where current keps for the IRIDIUM series can be downloaded. By the way, -8 magnitude is bright enough to be seen during the day.

ar

Repeater Link

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ACA Reply

Our repeater club in VK6 applied for a 40 to 2 metre gateway licence about 5 months ago and the ACA have said no!

This comes as no surprise as any new idea that does not conform to the narrow regulations, usually receives the thumbs down. To me there is a basic conflict between amateur radio being an experimental hobby and applying regulations. If what you want to do does not conform to the regulations you have a problem. Regulations by their nature are designed to restrict and this does not sit well with a hobby like amateur radio, and rapidly changing technology.

However, we still need regulations but what we need is clever regulations. So how do we go about creating clever regulations that don't frustrate experimentation? The 40 to 2 metre gateway is a good example of how restrictive amateur regulations are in this area, in Australia.

The Gateway

Firstly, for those of you who don't know what the 40 to 2 metre gateway is about, a brief description.

The idea came from the need for those amateurs, who are unable to operate on HF any more due to a range of reasons, to have limited access onto a HF band. The need was there, now came the technical means on how to achieve this.

The solution was to install a two metre repeater with a few extra functions. This repeater was connected to a 40 metre SSB transceiver and operated in the following way.

Normal operation could occur on the two metre repeater. To access the 40 metre SSB receiver, a couple of possibilities had been looked at. Simply transmitting on the two metre repeater's input by announcing your call sign, would connect the 40 metre receiver to the two metre repeater's output and you would hear whatever activity there is on that particular 40 metre SSB frequency.

The two metre repeater would remain in this re-transmit mode from 40 to 2 metres for

a pre-set period, say 10 minutes. If there was no amateur activity you would hear 40 metre noise. Any input on the two metre repeater's input would mute the 40 metre activity so normal contacts could occur via the two metre repeater.

Simply by operating on the two metre repeater, a single 40 metre frequency could be monitored as well. This made sure the frequency was free or monitored, whoever was using the frequency. This 10 minute re-transmission also overcame the need for a mute system on the 40 metre receiver.

In order to transmit onto the 40 metre SSB frequency from two metres, a CTCSS tone is required. Simple enough, as it is a positive action required by the amateur operator and limits the gateway onto 40 metres to only those amateurs who are licensed to operate on 40 metres.

Regulation Problems Number One

The licence application, even though turned down, did provide the exact reasons for why it was turned down.

The first reason was a carrier in the absence of a received signal. The two metre repeater, once activated by an incoming carrier on two metres, re-transmits the 40 metre SSB frequency onto the two metre repeater's output for reasons explained above. This is not allowed, as there is a repeater regulation that says a repeater cannot transmit in the absence of an input signal.

The normal carrier tail and ident on the repeater are accepted. The question I have is, why not? What is the problem with a repeater transmitting in the absence of an input as long as the repeater's output has an ident on it? You could argue that there was an input and that being the station that announced his presence on the repeater, but the intent of the regulation is, as soon as the input signal goes, so must the output signal.

I believe this regulation is due to history. The acceptance of repeaters in Australia by the licensing authority has been one of very little at a time. Concerns of where it all might lead with remote repeaters all over the country side would make any authority nervous and slow to allow the regulatory changes. A case of give them a little and watch for a few years.

Repeater transmitters going spurious and remaining locked on for hours on end was the main concern way back. The time-out timer perhaps is one way of limiting any damage. At least if a repeater went spurious, a time-out timer was some form of control.

What followed then was you must have an input to have an output. Way back, this was not a problem as basic repeater systems were just that, basic. Just to place a repeater on air was a big accomplishment and any fancy add-

FTAC Notes

John Martin VK3KWA

Chairman
Federal Technical Advisory Committee
PO Box 2175, Caulfield Junction VIC 3161

UHF Link Frequencies

In February *Amateur Radio* I suggested that the sub-bands 422 - 423 and 442 - 443 MHz could be reserved for use by wide band data links. Peter Mudie VK2XZP has pointed out that a repeater needs the greatest possible separation between its transmitter in the 439 MHz region and its link receiver above 440 MHz. So we need to retain some spectrum space for narrow band links in the high end of the 420 - 423 and 440 - 443 MHz link segments.

I would therefore suggest revising the band plan so that, where possible, wide band data links should operate on 100 kHz spaced channels between 421 - 422 and 441 - 442 MHz. Any further comments or suggestions would be welcome.

EPROMs for Surplus FM Radios

Lately I have noticed an increase in the number of FM signals appearing in the two metre SSB or beacon segments. The problem seems to be due to an influx of surplus Philips radios fitted with EPROMs which include non-FM frequencies. I saw a listing of one EPROM which contains seven beacon frequencies and a number of channels in the 145.800 - 146.000 MHz satellite segment.

These EPROMs are bad news because they can cause clashes and interference problems for everyone concerned.

If you have obtained one of these radios but don't have an EPROM yet, it could be a good idea to check first to make sure you don't get a dud EPROM. If an EPROM is consistent with the band plan, it should only contain frequencies between 144.700 and 145.775 MHz, and 146.025 to 147.975 MHz. ar

Computers

This month's column was difficult to find time to write as I have spent most of my free time over the past month re-building one of my computers. What a frustrating and time consuming job! ar

The Problem

As you may have seen from my comments on the 40 metre gateway proposal, regulations cause all sorts of problems. As soon as you have a regulation there is conflict and confusion as to why there is the need for the regulation and just what the regulation means. I have seen many examples in Australia of amateur regulations being applied differently in different States. What was allowed in some States was not allowed in others. If the regulators differ over the intent, then what chance do amateurs have?

How to Change

By now you must think all the problems I have outlined are the making of the ACA.

This is not true! We amateurs are just as much to blame, as we are part of the regulation making structure and have been all along a party to the regulation making process. However, how we negotiated is important.

We must support regulations that allow the widest experimentation and make sure the regulations are relevant and make sense. With every regulation there should be a clear explanation as to why the regulation is there. Any governing body can get it wrong. Their perception as to why a regulation is there can be wrong, or the need changed due to changes in society or technology.

The WIA is our negotiating body and it is in dire need of support to bring about regulation change. Without detailed input from amateurs the WIA has limited information to represent us. This input is not the "when are they going to do something about it" but writing detailed submissions and presenting them to your local WIA for endorsement.

The WIA

While briefly on the topic of the WIA, just who are "the WIA"?

We all refer to the WIA as if it is a large number of people all waiting to serve. We then wonder why at times so little is done and why it takes so long.

The answer is there is not a large number of people all waiting to serve. If you count up the number of "the WIA" who are in this administrative role and who have a direct link to Federal policy making, and who do the work, I have difficulty in finding more than three or four people. These are the people who do the leg work, not just fill positions, but write documents, try to seek input and argue our case with the authorities. A lot of this work is very time consuming. A two page submission on some regulation change can and does take 20 to 30 hours to prepare and present. When was the last time you devoted this amount of time to amateur radio that was not for your direct benefit?

on ideas were a long way in the future. But now the fancy ideas are coming up against regulations meant for an earlier time.

I ask again, what is the problem with a repeater transmitter remaining on intentionally for a specific reason? The repeater transmitter is under control of a circuit just as the "no input no output" is. Both are circuits controlling the transmitter. One is logic from the repeater's receiver and the other logic from the repeater's receiver and a timer.

Regulation Problems Number Two

No repeaters below 29 MHz is the second reason for turning down the gateway license.

Some other countries allow HF gateways, so there is not a fundamental law preventing gateways onto HF, or some international problem.

Once again, this limitation could well be based on, "there might be a problem we don't know about so it is best to say no".

This regulation needs to be changed to allow experimentation in Australia. HF gateways, or remote bases as they are called, have been in operation in the USA for decades. Some of these systems are very sophisticated, allowing access to all HF amateur bands with full remote control onto two metres or 70 centimetres. And I mean full control! You can tune to any frequency via your DTMF pad, along with rotating the beam!

Regulation Problem Number Three

This regulation problem was not mentioned by the ACA in their reply to the licence application, but why not mention it anyway: no re-transmitting an amateur without his permission, except on designated repeater frequencies.

The 40 metre gateway breaks this regulation, as any station coming up on the particular 40 metre frequency is re-transmitted once the two metre repeater's transmitter is triggered. I find this a curious regulation. I can transmit all over the world on any number of HF frequencies and be listened to by thousands of people, but if someone re-transmits my audio onto another band without my knowledge, it is breaking a regulation in Australia.

Why? What are we so concerned about. My amateur transmission can be received anywhere in the world and be re-transmitted onto the Internet without my knowledge. This regulation may no longer be relevant if gateways were allowed on HF, as by their nature they are designed to re-transmit. But the remote bases in the USA re-transmit any desired frequency onto two metres, etc without seeking permission.

VHF/UHF

An Expanding World

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All times are UTC

Andy Thomas

As I write these notes, Andy Thomas VK5MIR on the Russian space station MIR is waiting for the arrival of the Space Shuttle *Endeavour* to bring him back to earth.

Many stations were able to make contact with Andy via 145.985 MHz FM. I was one of those fortunates and worked him in March when his signals were 40 dB over S9.

Unfortunately, though, many other VK5s missed the opportunity because the channel was monopolised, on many of the five minute passes, by packet radio and voice constantly emanating from one VK5 station, effectively preventing others from having any chance of contacting Andy, much to their disappointment and probably that of Andy too. Such operating practices would never be tolerated on 20 metres.

The view of others, with which I agree, is that when time is very limited in which contacts can be made, then we have a responsibility to share any orbiting object, whatever it may be, with others desirous of making a contact. Only then can we say that the true spirit of amateur radio has prevailed. In this case, self prevailed!

Six Metres

Scott VK4JSR offers this plea. It seems that the band plan for 50 MHz is being totally ignored. During the incredible E and Aurora opening on 4/5, the number of VK operators using 50.110 MHz for a domestic calling frequency was unbelievable.

"More surprising was the northern VK2 who asked the VK3s calling on 110 to stand by, and I quote, "I'll get to the breakers soon". (You have to feel sorry for his next door neighbour, who was a six metre DXer, and who can no longer operate!)"

"I know that most of you operate within the terms of the band plan, however I am at a loss to work out what we can do to further educate those who still insist on using the DX window as their domestic chat zone. Suggestions?"

Sorry, Scott. Over a long period of time I have done my best. UK/EU stations do it, JAs do it and so do others. To their credit, the W and VE stations seem to be the most disciplined at the moment.

A45ZN

Ted Collins G4UPS reports that Tony Selmes A45ZN has been operational in the middle east country of Oman since 25/3/98.

His first six metre QSO was with Dudley Z22JE on 28/3 at 1410 and 5x9 signals. His next opening was 5/4 when he worked five VR2 stations in Hong Kong! On 10/4 he worked JS6CDB followed by another seven Okinawa stations, all on CW. On 11/4 the band opened at 0954 with SSB contacts to a pile of VR2 stations. At 1016 he worked V73AT on CW, then more VR2 stations until 1158.

On 12/4 from 1132 to 1213 Tony worked four VR2s and on 13/4 from 0800 until 1000 he worked a mixture of JR6 and VR2 contacts on SSB and CW for a total of 22 stations. On 18/4 he worked three more VR2 stations.

In all, Tony has worked four countries, Z2, JR, VR2 and V73 for a total of 69 six metre QSOs. His QSL Manager is Ted Collins, G4UPS, 27 Parklands, Hemyock, Cullompton, Devon, EX15 3RY, UK.

I bring you the above information because A45ZN should soon be within range of VK if the same conditions can prevail across the equator. Keep Tony in mind for the next equinox.

Countries worked by Ted G4UPS for April include SM, I, EH7, SP2, YU, S57, 9A4, 9H1, IS0, for very few contacts. Beacons heard GB3MCB, GB3NHQ, GB3RMK, SK3SDX, S55ZRS, YU1SIX and 7Q7SIX. Rather lean pickings for Ted!

Japan, Australia, and the South Pacific

Hatsuo Yoshida JA1VOK also reported on the excitement generated by A45ZN and other interesting DX. Hatsuo noted that the first Japan-to-Africa contacts of Cycle 23 were made on 12 April, when 5R8EE worked 7J6CCU and seven other stations on Okinawa, including JA1VOK/6.

Other calls that appeared in Japanese logs during April included numerous 9M2s (West Malaysia), 9M6s (Sabah), and BVs (Taiwan), FK1TK (New Caledonia), P29KFS (Papua-New Guinea), T88IY (Belau), V63AO (Micronesia), YC8UVO and YB8FEX (Indonesia), and YJ8UU (Vanuatu).

Australians and New Zealanders also worked several of these countries, along with three 3D2s (Fiji), P40AM (Solomon Islands), HL1LTC (Korea), and V73AT (Marshall Islands). K6QXY heard FO5DR (French Polynesia) on April 7. KH2JU (Guam)

worked VR2XMT, and several Hawaiians worked both east and west across the Pacific, including 3D2 and V73AT.

de W3EP

Winter Es to VK

Bob ZL3TY (RE570m) reports that on 28/5 at 0517 VK TV video 46.24 MHz and at 0725 VK2BHO on 50.140. 29/5: 0125 VK TV 46.24, 0405 VK7RAE/b, 0537 VK2BHO, 0540 VK3AJN, 0545 VK3ANP. TV still strong at 0745.

Six Metres

Emil Pocock W3EP in *QST's The World Above 50 MHz* reports "Six-metre DX activity around the world picked up during April. Contacts were still almost exclusively limited to north-south paths that crossed the equator and longer east-west paths at low latitudes. DX activity in the US was restricted primarily from the southern states to South America. Even so, there was an astonishing amount of activity.

"The Americas

"A mixture of transequatorial (TE) and regular F-layer propagation made north-south contacts over equatorial regions possible nearly every day of April. The largest portion of all contacts were made from south Texas to Argentina, but US stations across the entire southern tier of states, from Florida to southern California, also worked Argentina, Uruguay, and Brazil.

"DX from Europe and Africa

"Southern European and Mediterranean stations were favoured for most of the intercontinental contacts, primarily to Africa and selected parts of South America, but stations as far north as England and Germany got a taste of the DX. Among the interesting calls logged by Europeans in April were 3C5I (Equatorial Guinea), 5R8EE (Madagascar), 7Q7JL and 7Q7RM (Malawi), 9G1BJ (Ghana), A45ZN (Oman), D21AI (Angola), FR1GZ (Reunion), TR8CA and TR8XX (Gabon), TT8JE and TT8SD (Chad), V51E and V51KC (Namibia), Z21JE and Z21KA (Zimbabwe), and numerous South Africans. ZS6AXT also heard VQ9RU (Chagos) on April 1 and 6.

"The transatlantic path from South America was active during April. Doug Woolley, ZP6CW (Paraguay) found 6 metres open to Europe and Africa on several days. He worked TT8JE for a new country on April 1, 4Z5JA on April 9 (for what may have been his best DX of the month), and added 3C5I, EH6, and EH8 for new countries, bringing his total to 109. PY5CC also worked 3C5I and many Europeans, including SP6GZZ and SP6ASD, on at least 8 days. Rarer European and Mediterranean stations mentioned among the reports included 4X1RF and

4Z5JA (Israel), 5B4/EU1AA (Cyprus), CN8LI (Morocco), EK6AD (Armenia), JY9QJ (Jordan), LZ1DP (Bulgaria), OD5RAK and OD5SK (Lebanon), SU3AM (Egypt), SV9ANK (Crete), YO7VJ (Romania), and UA1WR (Russia). Those are some pretty attractive calls for Americans, who have yet to work most of those countries on 6 metres."

From Steve VK3OT: "I am considering an offer to fly myself to Timiri airstrip Irian Jaya at the invitation of Phil David YB0ARA. He has offered the use of the equipment; all I have to do is fly to Thursday Island then across the Timor Sea and on to Irian.

"It would be YB9 call area and I would try to do it at a time when both E and F2 is available, Maybe next Feb 1999. The location is Alun Alun Village, Irian Jaya, Grid square P185ko."

Steve VK3SIX/KL7SIX/VK3OT will return to KL7 on 17/9. While there, he will make an effort to work VK between 21/9 and 21/12/98. He says to keep in mind the frequencies he mentioned previously, including DARN radar on 49.635 MHz, which was heard in VK3 last April.

New Beacon

Scott VK4JSR and Steve VK3OT report, courtesy V73AT, that a new beacon V73SIX now operates on 50.006 MHz from Kwajelin Atoll. Power 10 watts, antenna PAR LOOP, Grid RJ38.

Six Metre Report From Japan

02/5: 7J6CCU/JR6VSP (PL36) to 9M2NK at 1548-1550. 03/5: 7J6CCU (PL36) to 9M2KT at 0843. 05/5: 0722-0819 JA1VOK (QM05) to VK4/VK2YHN/VK7GUN. 17/5: JK7IKU (QM09) to 9M2TO at 1025. 19/5: JE1TGN (PM95) to UA0ZBK/0 (PN78) at 0820. 22/5: JK7IKU (QM09) to XX9TSS at 1205. 22/5: JA8TMP (QN12) to XX9TSS at 1311. 22/5: JR6VSP/7J6CCU (PL36) to XX9TSS at 1318. 22/5: JA1VOK (QM05) to XX9TSS at 1344. 23/5: JH2COZ (PM94) to JD1BIY(M) on 2 m at 0823. 29/5: JH7LLE (QM08) to N6XQ (DM12) at 0712 for first trans-Pacific multi-hop Es this year. 30/5: JA1VOK (QM05) to UA0DX (PN68) at 1019. Note: XX9TSS (Op VR2SS/JK2PNY) was XX9AS in 1994. Result: three countries, UA0, W and XX9, are added this May for total of 28 countries in JA this year as of May 30. Best regards, Hatsuo JA1VOK

"BAD List"

"Several reports have again been received from ZS/Z21/5R8/FR1 stations re QRM from Italian stations; please DON'T work the same ZS stations every day if you hear them, otherwise they will just delete you from the log and no QSL cards will be sent; they ask you please to stop the ego problem! ZS6

stations are now running a bad list (I omitted BLACKLIST). Continue to cause QRM and you will not receive a card or confirmation! BE WARNED THEY SAY! (Their request, not my view give them the chance of working a new one! Furthermore, move up the band please when working Europe)."

de GJ4ICD

Two Metres to Japan

Steve VK2KFJ says that if you are interested in trying two metres from VK4 to JA, then contact Shirow JF6DEA via e-mail on jf6dea@ja6ybr.org and he will advise you of a station near Tokyo who is anxious to try.

Two Metres

Ron Cook VK3AFW reports that Max VK3TMP is working Gordon VK2ZAB most weekday mornings on 144 MHz around 2145, with signals usually 5x1.

"On 20/5 at 1031 I worked Barry VK3-TBM/p2, Mungo National Park, 5x1 both ways. The local weather was cool and showery. Signals were just detectable in the noise for 15 minutes before and were copiable for several minutes before sliding back into the noise. This leads me to speculate that there was some aircraft enhancement involved although short term tropo scatter enhancement is still a possibility. Distance is between 450 and 500 km. Barry was running 80 watts to a 10 el DL6WU Yagi; I was running 160 watts to a 16 el DL6WU Yagi.

"On 21/5 at 2310, Andrew VK7XR was peaking 5x8 on 144.080. Weather at both ends was cool but sunny and little wind. Andrew also worked John VK3ATQ, on 50.120 phone around 2230."

Barry Miller VK3TBM reports on his recent operating trip through portions of VK3, VK5 and VK2.

"I left home at 1950 UTC 12/5 and travelled on the Western/Dukes Highway from Melbourne to Adelaide. Equipment consisted of my FT-290R Mk1, the newly-modified DSE 80 watt amplifier, and the halo. Contacts on the way to Adelaide were as follows stating time, call, RS, my location and distance: 2045, VK3CAT, 5x9, Bacchus Marsh, 63-86 km; 2100, VK3CY, 5x3, Cardigan, 125 km; 2200, VK3AXH, 5x7, 10 km SE of Ararat, 80 km; 2220, VK3CY, 5x9, 5 km NW of Ararat, 115 km; 2236, VK3TMP, 5x1, 5 km W of Stawell, 245 km; 2255, VK3CY, 5x3, 25 km E of Horsham, 119 km; 2300, VK3TMP, 4x1, 20 km E of Horsham, 295 km; 2305, VK3AXH, 5x2, 10 km E of Horsham, 170 km; 2320, VK3TMP, 5x1-3, 5 km W of Horsham, 320 km; 2335, VK3AXH, 5x1, Dimboola, 210 km; 13/5: 0001, VK3CY, 5x1, Nhill, 178 km; 0010, VK3CY, 5x1, Lawloit, 195 km; 0039, VK3CY, 5x1, Lillimur, 220 km; 0111, VK3CY, 4x1, 20 km E of Keith SA, 280 km.

"Unfortunately, no more activity after my last contact with Des VK3CY. In SA, continued north through Clare, on to Hawker and finally Blinman in the Flinders Ranges. I last heard the Mt Lofty 2 m beacon just south of Clare. Sadly, I couldn't raise a contact on the Adelaide 6 m repeater!

"I pulled the halo off the car roof the next morning 13/5, and that was the end of two metres until I arrived at Lake Mungo National Park, NSW. On the way (19/5) I visited Randall VK2EFA, in Broken Hill.

"On 20/5 I arrived at Mungo, and was on air from 1000 to 1145. Antenna was a 10 el DL6WU Yagi, on a 4 m mast. I was set-up both evenings in the "Main Camp" QF16mg, which has no elevation benefit, and encircled by much tall plant life. My only contact was with Ron VK3AFW, at 1032. Signals were 5x1 both ways, with long and deep fades between the two peaks that allowed the contact. Distance about 498 km. I hadn't been expecting much activity on Wednesday; most responses received when I advised of my plans were for attempts on Thursday. But after half an hour of calling with absolutely nothing heard, I cannot describe how good it was to suddenly hear Ron's voice!

"Thursday night 20/5, as hoped, was busier and more successful. 1006, VK3CY, 5x1/5x3, 305 km; 1012, VK3RGL/b, 419; 1019, VK3XLD, 4x1 sent, no response; 1023, VK3TMP, 4x1 sent, no response, distance 536 km; 1044, VK3AXH, 5x1/5x2, 436 km; 1050, VK5RMG/b, 419; 1058, VK3ZGL/b, 529, 95 km; 1059, VK3FGN, 5x3/5x3, 95 km; 1108, VK2EFA, 5x1/5x4, 254 km; 1153, VK3RGL/b, 519; 1205, VK3XLD, 4x1/4x1, 490 km; 1210, VK3BRZ, 4x1/4x1, 490 km.

"Fading was noticeable again on Thursday night, but perhaps not as deep as Wednesday, or as slow; it was more obvious with the Melbourne/Lara stations than with 3CY, 3AXH, 2EFA, or the Mildura stations. I think both David VK3XLD, and Max VK3TMP, were pretty unlucky not to be successful on the first attempt. Both called as signals were rising from a trough, but the peak wasn't long enough for me to confirm that they had my RS report, or to get theirs. After those attempts nothing more was heard from the Melbourne area until David and I were successful at 1205. Sadly, I was unable to hear Les VK3ZLS, who attempted to work me after Chas VK3BRZ."

From Emil W3EP: "JH4JPO reported a 144-MHz transequatorial (TE) contact with VK8VF on April 15 at 1059, according to JA1VOK. This was the first Japan-to-Australia 2-metre contact of Cycle 23. Previous 144-MHz TE contacts had been reported from Argentina to Puerto Rico and Venezuela." [Something not quite right here as VK8VF is a beacon! ... VK5LP.]

2304 MHz EME Record

"Charlie Justinak, W7GBI (DM43am), reported a 2304 MHz EME with ZS6AXT (KG33vv) on 14 March. The 16,076 km distance easily breaks the listed world DX record for the band of 11,029 km held by W4HHK and JA4BLC since September 1994. ZS6AXT ran 70 W from a YD 1304 tube, a 0.5 dB pre-amp, and a 5-metre dish. W7GBI generated 500 W from his 802B Varian klystron to a 8-metre dish and also had a pre-amp with a 0.5 dB noise figure."

de W3EP

VK4 EME Activity

Allan Downie VK4KAZ QG62mp writes to advise of 70 cm EME activity in Queensland. He presently runs 100 watts to a bay of 4 x FO22 Yagis and an MGF1302 pre-amp.

"On 4/4 I worked NC1I (O/M) for my #1. 1/5: VE1ALQ #2 (O/M), K1FO #3 (O/M), 2/5: PA3CSG #4 (O/M), DL9KR #5 (O,O and 539). Since then conditions have not been good. No luck with my skeds to DL9NDD and W5ZN, having heard nothing from either of them. However, there has been steady overseas interest and I have a number of skeds for the end of May activity weekend."

Microwave Activity

"Brian Justin WA1ZMS/4 claimed a new North American 47 GHz DX record for a contact he made with K2AD/4 on 5 April. The pair chose a 109.8 km line-of-site path between FM07te and FM07fn in the Virginia mountains. They used 100 mW Gunn diode oscillators, with high stability frequency multipliers, and ICOM R-7000s as tuneable IFs. The antennas were 1- and 2-foot dishes. After initial contact was made, the pair carried on a 35 minute rag-chew using wide-band FM. This contact exceeds by just five km a tropospheric scatter record made 10 years ago in Oregon. They extended the record distance to 114 km on May 8/9."

de W3EP

Victoria

Alan VK3XPD reports another milestone for VK3. "Max VK3TMP is now on 10 GHz! He came to my QTH early May for a few final checks and tweaks - these "minor adjustments" took about a half a day to complete, but at the end of it we had a QSO up/down my street. The distance I hear you ask - about 100 metres! Further next time?"

"On 27/5 we finally made it. Max went to Arthur's Seat on the Mornington Peninsula near Dromana and I went to a lookout at the back of the Dandenongs near Olinda. Initially, our QSO was established with some difficulty.

"Max could hear me over the 60 km+ path but I could not hear him. The problem was

Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:-

H E	WHYIE	VK2AHA
J (John)	DELAHUNTY	VK2FCW
K J (Keith)	HASLAM	VK3ACE
N C (Craig)	MCMILLAN	VK3CRA
K A	POTTER	VK5ST
E L (Ernst)	BRADSHAW	VK6EB

Harold Eugene Whyte VK2AHA

On Easter Saturday 1998 a door closed sealing forever the passion for radio that was a major part in the life of VK2AHA.

Since the 1930s as a boy growing up in the suburb of Jesmond in Newcastle, Harold already had a great thirst for the knowledge of radio and communications.

Where and how this thirst started, sadly we didn't get to ask him, but he did leave us a wonderful collection of his life's achievements from his Intermediate School Certificate in 1936 and his Wireless Telegraphy Amateur Operators Certificate of Proficiency in Morse Code in 1937.

His diploma in Complete Radio via the International Correspondence School in 1937, every letter and card he had ever received and, of course, every certificate he ever won in radio events or was awarded, have all been found in his radio shack.

finally resolved and the obligatory numbers swapped

"I ran a signal for Max to search around for so as to get a better feel of this new (for him) mode of operation. Between us we found that it did not matter where I pointed my dish (even vertically up behind a big rock) Max had no problem finding me "20 over 9".

"Later we will try a non line-of-site shot from home QTHs by aiming into the clouds. Once again the distance will be about 60 km. I'm really looking forward to doing a bit of "cloud bouncing" down to Somerville."

From as early as 1937 he was making contact with operators all over Europe, the Americas and Asia keeping thousands of their cards as posted to him.

His early employment was with two local companies servicing radios and appliances in the Hunter Region. This was not new to the young Harold as it is known that in his early teen years he had set up a radio service in his local neighbourhood, charging two shillings per year for maintenance.

On the day Pearl Harbour was bombed by the Japanese, Harold married his sweetheart of three years. His employment would take a change of course as his radio skills were required by the Civil Aviation Department. After a few weeks at Mascot Airport in Sydney he was sent to Rockhampton in Queensland as Air Radio Traffic Controller to fulfil an obligation to the War Department. His duties were to guide US fighters into Rockhampton as well as plane loads of Japanese prisoners of war heading for internment at Cowra in NSW.

It was whilst guiding US aircraft into Rockhampton Airbase that Harold recognised a call sign on the back of an overall worn by a radio operator with the US Air Force. Immediately he knew that W6YO was Jules Wenglare, a US ham he had been speaking to since 1938 on his amateur radio station.

A firm friendship was entrenched that was to see many visits from Jules to Australia over the next 40 years. In 1976 came a visit to the US for Harold and his XYL where he was able to meet the many hams who had been regular QSOs over the past 40 years.

All amateur radio station equipment during the war was confiscated by the Post Master General's Department and held for release at the end of the war.

Now holding an interest in Broadcast Radio Stations, Harold obtained his Broadcast Station Operators Certificate of Proficiency in 1942 with the hope of furthering his career in radio after the war. Also in this year he acquired his First Class Commercial Operators Certificate of Proficiency should he need to work on board ships or aircraft.

Closure

Not many reports of local activity this month. Six metres continues to be a source of interest as contacts are made over extended distances with the approach of Cycle 23.

Closing with two thoughts for the month:
1. One small boy to another: "Of course I know the facts of life. Eat your vegetables and wash your hands."

2. Doctor to women's-libber: "Did you suffer from chest colds before you burned your bra?"

73 from The Voice by the Lake.

ar

In 1943 Harold asked to be released from his Civil Aviation duties in Rockhampton to return south as his wife's health was poor due to the tropical conditions. Most reluctantly he was released from duties. This then saw the commencement of his 40 year career with Radio 2KO Newcastle from October 1943, fulfilling an ambition to work with Broadcast Radio as an engineer, of which 10 years were spent as Chief Engineer.

Harold set up his amateur radio Station again at Waratah in Newcastle at the end of the war. Having to re-build his equipment was no deterrent, but a challenge. He went on to win many world-wide contests. He also built a "Super Regenerative Receiver for 2 Metres", which he call his "SNIFFER". As well, he built a very efficient HF mobile transceiver with which he won many events in the Hunter, Urunga, Woy Woy and Gosford Field Days.

The finest example of amateur service in a National emergency yet seen in Australia was provided by NSW hams in the disastrous floods at Maitland in NSW in 1949 and 1955. VK2AHA and other hams established and maintained valuable communications for the police which resulted in a Certificate of Appreciation from the Commissioner of Police for invaluable help in a time of crisis.

Amongst his collection of memorabilia we found his Certificate of Membership of the Wireless Institute of Australia dated 23 August 1946. Harold was always wanting to help in radio and he became a dedicated helper to Ron VK2ASJ. To ensure that Ron could gain his qualification in Morse Code, Harold designed and made a foot operated key which Ron was able to master with his disabilities. This was to be an ongoing relationship that VK2AHA would not neglect, becoming a dedicated helper to Ron while giving Harold a satisfaction and pride in his skills with the power of amateur radio.

In 1961 Harold heard a May Day call from the Yacht "Kylie" caught in gale force winds on its trip from New Caledonia. He passed on the message to Rescue Authorities and "Kylie" was made safe and sound. It took some time for the owners to track down their messenger; a letter of thanks and a photo of the yacht was found with Harold's possessions.

Harold's working life was radio, and his private life was radio too, a passion that began when he built his first crystal set at the age of 12 years. The friendships he formed via amateur radio have stood the test of time covering some 60 years.

His passion led him to enormous satisfaction, knowing a job was well done and along the way, the bonus of knowing he had saved a few lives.

RIP, Harold.
Bill Hall VK2XT

Keith Haslam VK3ACE

Keith got his limited call in the middle seventies and, after numerous attempts at CW, a period during which he made many and various derogatory remarks about the necessity of brass pounding as a requirement to obtain his ticket, he succeeded in obtaining it at Camberwell Civic Centre and was on air with his full call in 1980.

He and Maurie Halkier, then VK3MKH, formed a successful business, Eastcom Communications, at Wattle Park, where any ham who was a ham, had dealings with them. They then relocated to Wantirna and, some time later, to East Ringwood. It was during the latter months of this time that Keith suffered the preliminary discomforts of his illness, and he again relocated to his home in Bayswater.

Keith's wife Jean, an accomplished Naturopath, nursed him through a progressively worsening state of health, until he was admitted to hospital several months ago where he underwent treatment for cancer. Few people were aware of how ill Keith was, as he didn't advertise the fact, instead all the time looking forward to new projects he had in the pipeline.

Eventually, even his indomitable spirit had to bow to the inevitable, and he passed away very peacefully in the early hours of 3 June 1998, with Jean by his side keeping vigil, as she did throughout the entirety of his illness.

Keith was a wonderfully generous man, sometimes cantankerous and short tempered, but always there when you needed him. He was a big man physically, as well, and his passing will leave a big hole, not just in the amateur fraternity, but in the lives of everyone who came in contact with him,

Hope they've got a good HF rig, a Pentium II, and a modem where you are, Keith. We'll e-mail you mate; I reckon the address would have to be keiuh@bigshack.uphigh.

Dave Timson VK3TD

Craig McMillan VK3CRA

Craig McMillan sadly passed away on 29 May 1998 aged 37.

Craig was actively involved in many facets of amateur radio since obtaining his Novice call in 1981 and then his Full call in 1982. He was an active fox-hunter and was on many a winning team locally as well as twice part of an Australian Champions team at Mt Gambier. He used to run JOTA stations as he was an active member of the Scouts. He also would have been heard in many contests.

In his early years of radio he was also interested in obtaining those rare overseas contacts. He used to have the rig next to the bed so that he wouldn't miss that vital contact.

To his credit Craig also actively promoted the hobby. He ran Novice classes and held

regular exams. He was also very generous. If someone wanted some assistance or needed a loan of gear Craig was always the first to offer. Many of us owe our licence to Craig's help.

Due to illness Craig and his family were unable to commence their long awaited round Australia trip. Cruelly, a second attempt a year later had to be cancelled a week before departure because of deteriorating health. However, Craig never lost his positive attitude to life. To the end he was cheerful and still willing to give a hand where he could. His bravery in the face of adversity is an example to us all.

Craig was a wonderful family man and is survived by his wife Jocelyn and children Kate, Haley and Scott. He will be sadly missed. Chris VK3CHR and Mark VK3JMD ar

New WIA Members

The WIA bids a warm welcome to the following new members:

L21152	MR B L KEEGAN
L21153	MR R J TURNER
L21154	MR P TAME
L21155	MR E P AKINS
L21156	MRS L G MENCINSKY
L21157	MR M J DUNN
L21158	MR J H BAKER
L30973	MR T W SLEATH
L30975	MS J SAVILL
L30976	MR P DERNIKOS
VK2EM	MR B H EKERT
VK2JB	MR J E BAYLIS
VK2ABF	MR C E J SIMS
VK2ARC	MR M J MORAS
VK2ASU	MR J A HALE
VK2BTF	MR E BREEN
VK2EFT	MR L R PAREDES
VK2FJL	MR F J LUSA
VK2FUL	MR N C KAARSBERG
VK2GQC	MR R E NOTSON
VK2IGI	MR C J LOURENCO
VK2KJN	MR J NELSON
VK2MAX	MR G SNOWDEN
VK2MJV	MR D V MARKS
VK2MTD	MR M S DUNN
VK2TDS	MR D R SMITH
VK2TOC	MR J E CLARK
VK2TOI	MR R G KELLY
VK2VIC	MR A J VICKERS
VK2XGK	MR M CHEESEMAN
VK3JU	MR C J HOLLIDAY
VK3XN	MR N I DONCASTER
VK3CML	MR L W BRITTON
VK3DBL	MR S HAINES
VK3ZRX	MR J MORRISSEY
VK4SKY	MR J E ABBOTT
VK5ETH	MR E T HOLMES
VK7KXA	MR L JACOBSON
VK7PBA	MR D DE GROOT
VK7ZAO	MR I E K LAMBERTON

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Band Plans

A recent VK5 Division broadcast mentioned a letter from a VK5 member regarding Band Plans. This detail was also noted on packet radio.

A subsequent letter from an interstate source makes some points which I believe are worth general consideration. This letter addresses the problems encountered when "Gentleman's Agreements" are not followed. This is the letter:

"I wish to express my agreement with your comments on band plans, and to add a couple of further comments.

"In some cases the problem is due to selfishness, but it is often due to lack of information. Those who are not WIA members and/or don't buy a Call Book have little opportunity to get the details of the band plans, or even be aware of their existence and the reasons for them.

"Some amateurs do not believe that the band plans reflect actual operational realities and can therefore be ignored. The classic example is FM stations in the 2 metre SSB segment. They may not be able to hear much (or any) SSB activity (not surprising when using an FM radio and a vertical), so they assume it is not there.

"The same with beacons. Some amateurs do not realise that an interstate beacon will be perfectly audible to an SSB station even though an FM station cannot hear it.

"Regarding the comments in the letter you received on calling frequencies, amen. It is immensely frustrating to hear a weak station calling underneath local QRM - and just as frustrating to know that a weak station may be audible if only the gas-bagging would stop.

"I feel that we need a dual approach:

" More publicity for the band plans and the concept of considerate operating habits, especially amongst newly licensed amateurs; and*

" Greater willingness of more experienced amateurs to come on air when these QRM*

problems occur and to explain diplomatically the benefits of co-operation.

"I also feel that three aspects of the band plans need regulatory support by inclusion in the Licence Conditions Determination (LCD):

" No FM in designated band plan SSB/CW segments;*

" No transmissions other than beacons in designated beacon segments; and*

" No terrestrial contacts in EME or satellite segments."*

I have provided this material not as a Divisional President but as an individual operator who feels that the subject matter needs to be aired to educate those who are not fully aware how orderly use of our spectrum is possible.

Ian J Hunt VK5QX
14 Dexter Drive
Salisbury East SA 5109

Amateur Radio "Over to You" Page

With the return of Bill Rice VK3ABP to the Editor's chair, there are a couple of things I want to say. The first is to acknowledge the time and effort put into the guest editorials by Jim Linton, and the second is to say "Welcome back Bill!"

I was delighted to read on page 3 of the May issue that "a majority of Councillors thought the suspension (of the Editor) inappropriate and it was rescinded", and commend them for their decision. (By way of background, the same paragraph also stated that the suspension was a response to the publication of letters in the February issue, which had been deemed inappropriate.)

However, the official response from Neil Penfold on page 51 of the June issue seems to say otherwise. It implies that the Editor was somehow not suspended, and says that the reasons for having a Guest Editor "were never given verbally or in writing", and that the report was in "the Editor's words entirely".

Was the Editor suspended or was he not? Quantum mechanics notwithstanding, he cannot be in both states simultaneously! Besides, what has happened to common courtesy, when such a senior person is deposed from his job, and he is not even told about it?

Finally, why is it relevant that these were "the Editor's words entirely"? Of course they

are the Editor's words, because he wrote the article!

One would have hoped that the report in the May issue, followed by the Editor's return in June, would be the end of the matter. However, Neil's letter raised new concerns, as the wording seems to convey dissent, and there was nothing to reassure us that such a debacle would not happen again.

In the VK5/8 Divisional Notes for May, Ian Hunt VK5QX "expressed personal concern that the WIA should be seen as being honest and open in all its activities", and quoted a judge who said "unless the public and business can trust each other, the whole fabric of society is at risk". He continued the theme in the June issue where he emphasised the need for "the WIA to be representative of ALL amateurs" (his emphasis), and that he hoped that office bearers in other areas of the WIA would have the same realisation. I think his views would be endorsed by virtually all WIA members.

You see, we ordinary members regard the letters page as OUR page. We do not expect that everyone will agree with us when we put pen to paper, but because it is US who fund the magazine and US who elect people to manage things on our behalf, we expect and in fact DEMAND that this right of free access be protected by those we elect, not restricted in fairly transparent attempts to protect vested interests.

We expect our contributions to be encouraged, not censored. We want office bearers who are prepared to study, discuss, and ACT UPON our suggestions where appropriate. We want office bearers who are not running private agendas, but are prepared to make the hard decisions and to work WITH us to help get the WIA out of its present difficulties, not against us.

After all, at the end of the day isn't it us, the members, who are in charge? Would someone from Federal Executive be kind enough to reaffirm the principle of free and open access to this page, by all members, and assure us that such an inappropriate and totalitarian response to the normal workings of the Institute will never happen again?

Peter Nesbit VK3APN
24 Sovereign Way
Avondale Heights VIC 3034
pnesbit@melbpc.org.au

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WIA Divisions News

Forward Bias — VK1 Notes

Another month has come and gone, and again I must maintain a delicate balance between pre-emption and retrospection. As you may or may not be aware, this column is prepared some weeks ahead of the publication date of the magazine (in this case 11 June), the net result of this being the need for care when talking about last month's meeting (which for me is presently May - at the time of printing it will be June!)

In the retrospection department, our May meeting's buy-and-sell night was a great success. Every available table (and a few brought along by members) was full of gear and some fifty people attended and went home with goodies. I managed to restrain myself on the evening but have two FM-900s on hold (thanks Phil!) pending pickup later this month. One of these will be going to a friend of mine who has had a licence for ages but never went on air through lack of a rig. These rigs are ideal for new users, easy to drive, and well protected against incorrect antenna match and the like. Grab one before they all go!

Pre-emption wise, I expect the June meeting will have gone very well. Malcolm Brinkley, from Telstra MobileNet having been our guest speaker. Malcolm will be describing the intricacies of the digital mobile network and some of the unique problems faced by the various carriers in a country with such dispersed population centres.

On other matters, at the committee meeting earlier in the week, Mike VK1MJ, our Federal Councillor and QSL Manager, gave a brief report on the bureau's operation so far this year. A staggering 4,500 cards have been received so far this year and some 5,000 have been sent out, a record I gather for recent times.

Of interest, to both local users and operators in VK2 and VK3, was an update from Paul VK1BX who attended the meeting and gave an informal report on some of the future enhancements for the Mt Ginini site. Of note was the replacement of the long serving but nonetheless temporary Philips 828 based 2 m transmitter with a much higher powered Philips 814. This will yield a gain of some 4

dB in output power to take us to an ERP of 50-60 W. In due course it is intended to further boost this to some 120 W ERP and provide a diversity receive system. Paul indicated that the technical group are also considering 6 m and 29 MHz FM based services in the future.

In coming events, Peter VK1KEP will be giving a presentation at our July meeting (8 pm, Monday 27th) on his experiences as one of a small group of VK1 operators who spoke with Andy Thomas aboard MIR. Peter will also relate some of his experiences in dealing with the media interest that surrounded this event.

As usual, the coffee and tea will be on. Look forward to seeing you there!

Hugh Blemings VKIYYZ

VK2 Notes

Affiliated Clubs Conference

By the time you read this, the Affiliated Clubs Conference will have been held on 13 June and, by all indications, should have been a great success. At the time this went to press, 19 clubs had signed to attend the conference and that is very good when you consider there are 43 amateur radio clubs affiliated with the Wireless Institute in New South Wales.

The agenda for the conference ensured a day of subjects, providing an excellent forum for the discussion of and action on the various issues affecting our hobby of amateur radio in VK2.

Of course it moves me at this point to add that an event such as the Conference of Affiliated clubs needs a lot of organisation and this is not up to just one person, but a lot of volunteers doing their bit for amateur radio. One of these is Ken Westerman, Affiliated Clubs Officer for the NSW Division. Congratulations on a job well done Ken. I recently asked him to describe a little about the process and here is what he had to say.

"The Affiliated Clubs officer oversees a two way dialogue between the Council and the Affiliated Clubs and organises the six-monthly Conference of Clubs which is held at Amateur Radio House at Parramatta in Sydney", according to Ken.

He also said *"The best way to describe the Conference of Clubs is a meeting where the Council has matters, many and varied, presented to it. Organising the Conference is a good way to keep in communication with the clubs"*. Ken concluded that, between conferences, communication is very essential and he does this by telephone due to the fact that cheaper STD rates have made his job a lot easier and cheaper as one can communicate adequately without it costing a fortune.

Speaking of Affiliated Clubs

It was my very great pleasure to be able to visit two Affiliated Clubs in the past couple of months. First it was down to the Illawarra Amateur Radio Society in Wollongong on Tuesday, 12 May. Thank you to all who attended; it was a great evening and what an enthusiastic gathering. Darryl VK2TDS did his Automatic Packet Reporting System APRS presentation and that kept people talking till long after we were motoring our way back up the Bulli Pass toward Sydney. Thank you everybody and, yes, I will be back.

On Wednesday, 20 May it was down to the seaside around the salt air of Rose Bay to Eric VK2KUR's Club, The Waverly Amateur Radio Society, where we spent a very enjoyable few hours talking about the Year 2000 Olympics and Paralympics, and again with Darryl and APRS. This is another club which is progressive and very much prepared to exercise the basic tenets of amateur radio. Great clubhouse, too. Thank you. It was a privilege. Amateur radio is very alive and kicking. If you would like a VK2 Councillor or visitor to talk about the hobby and what can be done, do not hesitate to contact the Divisional office.

Developing Policies and Looking at the Direction of the Division

Policy and Strategy are very frightening words when you hear them mentioned, but are they necessary? It certainly is no mean task for a Committee and its Chair who says they are two very important and labour intensive features of any successful organisation.

Owen Holmwood VK2AEJ, VK2 Councillor and Chair of the Policy and Strategy Committee, became very thoughtful when I asked him about his Committee. He put pen to paper and came up with this description of his involvement. Firstly he talks about the Dural property north west of Sydney and then about Policy and Planning.

The Dural facility is a distinctive feature of the NSW Division's capacity to serve its members. Thanks to the vision of an earlier generation of amateurs, this transmitting facility on the northern outskirts of Sydney offers a prime site for HF and VHF transmission of the regular Sunday broadcasts, and an extensive range of beacon and repeater services. It also has a commercial antenna installation, for which the lessee contributes handsomely to NSW Division coffers! Despite the wide range of antennas on the site, only a small fraction of the total land area is currently in use. The main equipment building, constructed in 1957, is still waiting to be expanded to its original design of nearly three times the current floor area. The present

Council is giving serious consideration to completing the building, and bringing to fruition the progressive improvements of recent years.

Policy and Planning

There are two ways to change organisations: evolution and revolution. While the twentieth century has warmly embraced evolutionary theory as a mechanism for the improvement of biological systems, it has recklessly experimented with revolution to improve human organisations. At a stupendous cost to all involved. The WIA has seen its revolutions, and here in NSW we have still not fully recovered from the most recent.

The proponents of quality improvement have three fundamental tenets:

- The only changes worth making to a system are incremental ones.
- The changes should produce measurable improvements.
- The changes should be reversible if they don't work!

And so it is with changes to our Memorandum of Association and Articles of Incorporation. Our first task is to track down the defects in the current documents, and fix them. Carefully. After seeking submissions via the broadcasts earlier in the year, the Policy and Planning Committee is convening at the end of June to consider a range of proposals. From this meeting, and perhaps several which will follow, members can confidently expect to get several recommendations which, if implemented, will improve the ways in which the NSW Division serves the interests of its members. We may even be able to initiate worthwhile improvements which don't offend anybody! Hope springs eternal! Those wonderful words came from VK2 Divisional Councillor Owen Holmwood.

Post Office Box

There are many members in New South Wales who are benefiting greatly by the special post box which has been made available for those amateurs to use as their postal address for amateur radio related mail. This of course is a service to licensed amateurs (members of the NSW Division of the WIA) who do not wish to have their personal address published by the ACA on the Internet. If you are interested, please contact the Divisional office.

Internet Page for the VK2 Division

You might have seen the great job Richard Murnane VK2SKY has done with the NSW Divisional World Wide Web page. The address is <http://marconi.mpce.mq.edu/wia/>. The site, which Richard has worked extremely hard to build and maintain, contains loads of

amateur radio related information with links to other WIA web pages right around the country, news, and contest information. Pay it a visit soon. The pages are hosted courtesy of Macquarie University's School of Mathematics, Physics, Computing and Electronics.

For More Information

For more information, contact the office or any of the Councillors. We will be only too pleased to hear from you. If you would like to get in touch with an individual Councillor, just contact our Divisional office and it will be arranged. Our freecall phone number is 1 800 817 644 and our address can be found on the WIA Divisions' page. If you are addressing email to the office, please do so at vk2wi@ozemail.com.au. There'll be more to report next month, but if you have anything you would like us to include as VK2 news, send it to me at PO Box 82, Springwood NSW 2777 or by email to dthom@penrithcity.nsw.gov.au.

David Thompson VK2NH

WIA Victoria News

WIA Victoria AGM

The annual general meeting of WIA Victoria was held on Wednesday, 27 May, mainly to deal with the statutory requirements set out under Corporations Law, the adoption of reports, and to appoint the auditors.

It was announced at the meeting that one of our members had won a major prize in the WIA membership recruitment and retention drive. Joe Janne VK3AU is now the proud owner of a Kenwood VHF/UHF duo band rig.

In a special presentation, Dr Tuck Choy VK3CCA was presented with the *Amateur Radio* 1997 Technical Award certificate and \$100 cheque for a technical article judged by the WIA Publications Committee to be the best.

During the discussion session of the AGM, members heard about the substantial capital investment made in the new VK3BW1 broadcast facility.

Council is still hopeful of having more than one broadcast a month, but this depends on suitable volunteers being available, and more contributed news material from clubs and individuals.

Interesting Times, Indeed!

Two recent developments in Europe are worth serious consideration by anyone concerned about the future of our hobby.

The first is the move by the Radio Society of Great Britain (RSGB) to drop the mandatory Morse code proficiency requirement for access to the amateur HF bands.

The other is the introduction in Germany of a learner licence scheme which allows the operation of amateur stations by unqualified persons.

Both developments have a common theme. They are policies of IARU member radio societies to redress the decline in our hobby, and make it more attractive and accessible.

The RSGB is seeking a reduction from 12 wpm to 5 wpm for full HF band privileges in Britain, and through the IARU is urging the abolition of the mandatory Morse code requirement.

WIA Victoria will be guided by the wishes of its members on the issue. The last member survey on the code requirement found support for its retention. Another survey is certain to be held in the next 12 months or so.

AX3ITU

Special Event Station of the WIA (Victoria).
Operated by members of the Eastern
and Mountain District Radio Club

EMDRC

Australia

ITU
133 Years

World Telecommunication Day 1998

WIA INSTITUTE



AX3ITU 1998 - Steve VK3DBL operating and working a very large 20 m dogpile, long path to Europe.
(Photo by Jack Bramham VK3WW)

Germany's national radio society, the Deutscher Amateur Radio Club, has announced a program under which aspiring radio amateurs can operate "learner permit" style amateur stations. A similar system existed in the former East Germany.

It means that a radio amateur can apply to set up an instructional station for a prospective radio amateur to operate. The rules don't require the licensee to be in attendance to directly supervise the operation.

World Telecommunications Day Update

The special event callsign AX3ITU was activated by nine operators on World Telecommunication Day, Sunday 17 May, who made 436 contacts including 51 countries.

The callsign is issued by the Australian Communications Authority to WIA Victoria, which invited the Eastern and Mountain Districts Radio Club to put it on air.

The activation of nearly 18 hours was a sterling effort. The operators, including two using CW, were willing to stay on air for the maximum 24 hours, but the lack of DX propagation stopped them.

Among the contacts made were those with other World Telecommunications Day stations AX2ITU, AX5ITU and AX6ITU.

New life for VK3RTV

The Melbourne ATV repeater is to be completely refurbished. The WIA Victoria Council has agreed to finance this project which is to be completed in four stages. The project management will be undertaken by Peter Cossins VK3BFG and work is to commence immediately.

Jim Linton VK3PC

VK5 and VK8 Notes

A Soliloquy

Over the last week or so I have had reason to think upon matters in general which can play a major part in one's life. Almost inevitably very personal feelings become involved when such consideration is in progress. This morning I stood on our front porch with my wife and gazed at a brilliant sunrise. So, what has this to do with amateur radio?

There are wonderful things which we can encounter in our lives. These can include tangible and intangible things such as a sunrise or sunset, the love of one's family, the sight of a beautiful landscape or plumage of a brilliantly coloured bird.

When we encounter things which touch our hearts we find that we are obtaining benefit from them. Pleasure results from incidents such as these.

My thoughts turned to the pleasure which I have obtained from amateur radio over the years (I gained my licence in 1959). I look back to those early days (for me) as an amateur radio operator and still gain great pleasure from the many memories which I have. Great contacts, fun at "hamfests", new friends made both locally and internationally. I have been blessed with the opportunities where many of these people have visited my home and where I have been able to visit theirs. The list of benefits from these amateur radio connections could go on and on.

But, does this only apply to looking at the past? The answer is a definite "NO!" I see amateur radio now as offering just as much pleasure and benefit as ever it has. There are exciting things happening in the world of

technology and we are in a prime position to gain much from these developments.

There are some who are very capable on a technical basis and others who must follow the lead and be guided. All of Amateur Radio can benefit as a result.

I see very often what appears to be doom and despondency within our ranks. We are told that the hobby is dying, that youth are not interested, that the Internet has taken over etc, etc.

Well, I for one, do not accept that all this is so. I have a plan to help turn all this around and that plan is for us to "HAVE FUN" within our hobby. Enjoy the experiences just as we have done over the past years (boy, it must have been exciting for Guglielmo Marconi!).

We can show our hobby as being interesting and fun by enjoying it ourselves. In this way it will become evident to onlookers that here is something well worth while. Such a picture is more likely to interest them in amateur radio.

A plan like this that implies neither we, nor our fellow amateur radio operators, will enjoy what we are doing if we are involved in nastiness, selfishness, backbiting, and other unfriendly and anti-social actions towards others in the hobby. It cannot be fun when such things happen.

I believe this has been occurring within our organisation. Yes, there is a need for us to be on guard against outside influences which would reduce our privileges; however, we need to be aware that to take ourselves too seriously is to risk our "fun" hobby. Co-operation and a willingness to get along with others is of paramount importance.

Well, so much for what might be seen as a sermon. However, I felt that it was necessary to express some of these thoughts. Perhaps some readers might figure this out further for themselves.

Andy Thomas VK5MIR

Andy Thomas will by now have "come down to earth" having had to undergo all sorts of tests and de-briefings as well as a recuperation period as a result of his time spent in a zero gravity environment. No doubt many tales will be told of what took place while he was in space.

I have one true story which may be considered to be really "way out!"

My father-in-law Charles, then 80 years of age, came from the Island of Anglesey, off Wales, to live with us just over 4 years ago. For a long time he was quite puzzled as to any benefit at all that could be derived from my hobby. He saw little or no value in it.

However, after Andy Thomas went into orbit he began to take a great interest, particularly when he learned that I was speaking with an astronaut from time to time.

He would ask me, "How is our lad going up there?" and tell people at his Dance Club about it.

It so happened that Charles died suddenly on 2 June. As a result of this happening I was not in a position to keep up my regular contacts and I was informed that Andy had been looking for me. I sent a packet radio message to MIR explaining the situation. On my next voice contact with VK5MIR, Andy expressed his condolences and asked me to pass his sympathy greetings to my wife, Sylvia. She and I then commented almost simultaneously that Charles would have been delighted and absolutely thrilled to know that the news of his death had been passed to a "Space Station" and then remarked upon by an astronaut. Believe it or not, both my wife and I were actually buoyed up by such a thought.

It also happened that later, when asked in an interview on an ABC Radio program about talking to Andy Thomas about personal things, I retailed that same story, thus spreading further the news of Charles' passing. Amazing! The power of communications in this day and age (something to think about!).

I trust that these personal glimpses into the thoughts of VK5QX might have been of interest to you.

Next month I hope to have for you details regarding the final results of Council elections and perhaps a brief resume of the Public Relations efforts performed by Andy Thomas from space.

Ian Hunt VK5QX

VK6 Notes

Hi again folks, hope you've had some serious rain lately. Starting to turn green here in Toodyay, and the Avon is filling slowly, but not flowing as yet (as of 7/6)!

The Last VK6 Division General Meeting?

The May general meeting was the last to be held for the foreseeable future, due primarily to the inability over the last 12 months to obtain a quorum. Monthly General Meetings will no longer be held, a practice followed by several other Divisions. There will be emphasis on the twice yearly "Conference of Clubs". Monthly Council meetings will continue at which visitors will be welcome. The Annual General Meeting will occur as usual.

There are a great many members who, for various very good reasons, cannot attend Divisional meetings (of whatever ilk), but who are nevertheless concerned or interested

in proposals discussed and outcomes reached at these meetings. I would strongly support the instigation of some sort of on-air "parliamentary style" question time, presided over by at least a couple of the Councillors. This would provide valuable feed-back to our elected reps and is also more democratic. After all, we are uniquely placed in that we ALL have radios and COULD use them to have our say.

Search for Communal Facilities

The search for a shared site, buildings, etc is underway, with Whiteman Park the initial candidate. I tried to find this site but got lost in the Park! The Park itself has good access from main freeways.

My own feeling is that we will find it very hard to find a geographical location that suits the majority of members, wherever we look, and that this is just symptomatic of the problems we face in centralising all activities in one large group. It is essential that a permanent facility is not established in a location to which amateurs are not prepared to travel.

Now is the time to have your say, otherwise you will not be in a good position to complain later if you find the final choice unsatisfactory. And we will all certainly be the poorer for your absence. It is YOUR money being spent! Details for comments to Keith VK6XH once again are: e-mail to vk6wia@faroc.com.au. Alternatively, I'm sure any Councillor will forward your thoughts to Keith (you could call one on your radio!).

Operating

I was in ZL in May for a few weeks, and took the opportunity to catch up with several old friends via the National System, which links almost the entire country on UHF. It was especially useful as all I carried was a hand-held, and yet I was able to catch up with friends 400 km away with 1 1/2 watts!

I have to say that I am extremely envious of this set-up, and would dearly love to see the existing VK6RUF system extended to cover the whole of the South-west (we've got one or two hills here too!). Opposition to this from some country areas stems from concerns about losing the existing purely "local" repeater facility. In ZL, almost all Branches (of NZART) also have at least one other "local" repeater which can be accessed, so the problem doesn't arise.

When was the last time you heard a CQ call on 80 m? I tried recently (for 20 minutes one evening - full wave loop, 100 W), and failed to invoke a response. Most of the activity (faintly) heard was coming from the East Coast. We are severely disadvantaged, it seems, by the time difference between us

and the rest of VK/ZL. Is there an alternative band which could bridge the "time-gap"?

Whenever I have found someone to talk to on the 30 m band, I have been impressed by the stunning signal strengths noted on interstate contacts. The band seems ideally suited to spanning VK (in ZL with the smaller distances involved, the 40 m band is the daytime "rag-chew" band). Perhaps we could get the ball rolling on 10 MHz by initiating a regular net, or has this been tried before? I would be interested in your comments or further suggestions?

Try me on air after the WIA call-backs on 3582 kHz, or on any other day at +/- 0740 local on 3575 kHz (or chrismor@avon.net.au).

From the Minutes

June meeting: SEG are seeking to make frequency changes to the VK6RTW beacon to 50.308 and 144.564 MHz. Advice to Federal about the appointment of Will VK6UU as Federal Councillor and Bruce VK6OO as Alternate Federal Councillor was approved.

Reports: An invoice for \$779.21 has been provided to Federal covering reimbursement for expenses relating to the HF Beacon. Two new members were welcomed. Work is proceeding on the Augusta and Exmouth beacon projects.

General. Wal VK6KZ drew attention to a move by the RSGB to have the Morse



Barry Hill VK7BE being presented with the 1997-8 Meritorious Service Award by VK7 Division President Ron Churcher VK7RN at the AGM on 21 March 1998.

requirement reduced to 5 wpm for licensed operation below 30 MHz. Tony VK6TS raised the subject of Australia joining the CEPT licence scheme. No progress yet by Worksafe on tower climbing requirements. Keith VK6XH advised that he had had only two replies to the circular letter to Clubs about the Whiteman Park project. Prior to appointment of a new Division President, Cliff VK6LZ, as Vice President, is in the chair. An appeal for more operators to handle the re-broadcast of the "Newline" service was issued.

Chris Lowe VK6BIK

"QRM" News — VK7 Notes

ACA Listening Station Visit

High up in the hills to the north-east of Hobart, the ACA operates their main listening station for south-east Australia. Normally a high security area in charge of an old friend of amateur radio, Dave Thorne, all was revealed to twenty lucky Southern branch members in early June when a visit was arranged.

The members were astonished at the array of sophisticated equipment demonstrated; you name it, they've got it! The massive antenna farm keeps tabs on events world-wide. The writer is keeping his fingers crossed that he can wangle a visit himself when next down south!

Central Highlands ARC

Perhaps the biggest actual amateur radio CLUB in Tasmania (106 members) is the Central Highlands ARC, principally made up of those odd people who love to throw a funny looking thing they call a "fly" into some water and pray that a big trout will be tempted.

To get the "Tassie Trout Award", and gain double kilogram points, hams need to contact Club members over the weekend of the 3-4-5 July on 3.585-3.590 MHz (nights) or on 10 and 15 metres (daytime) and need to catch 14 kg of trout (seven contacts). At other times look for members on 3.585-3.590 MHz most nights to catch single trout. 50 contacts give you a gold award, 100 a platinum award. When you contact them, members will give you all other details.

Membership Drive

The Tasmanian Division is very pleased with the results of our membership drive with new members being signed up each month. For more information from the State of progress look at our Website www.wia.tasnet.net.

Ron Churcher VK7RN

Club News

Blue Mountains Amateur Radio Club

The Blue Mountains Amateur Radio Club held its Annual General Meeting on 1 May 1998.

A new team was elected as our office bearers with unanimous support of the members present.

Our Honorary Secretary, Treasurer and Magazine Editor, were re-elected for a further 12 months. All the outgoing office bearers carried out their duties effectively for the past year and their efforts were very much appreciated.

The new officials are: President, Phil Derbyshire VK2GPB; Vice President, Greg Arrell; Secretary, Guy Fletcher VK2BBF; Treasurer, Mike Bermingham VK2KVC; Education Manager, Neil Fallshaw VK2XNF; Repeater Manager, Adrian Clout VK2BFN; Magazine Editor, Kevin Purves VK2MNU; Historian, Dan Cliff VK2DC; Net Manager, Derek Reed VK2UM; Catering Manager, Neil Fallshaw VK2XNF; Property Manager, John Watt VK2QN; Committee Members, Dave Barry VK2IH, Eoin Milne VK2WCR and Neil Fallshaw VK2XNF; Fox Hunt Manager, Dan Cliff VK2DC; and Publicity Manager, Greg Arrell.

The Club meets on the first Friday of each month at Springwood High School, at 8:00 pm. Entry is via the Chapman Parade gate, then turn into the top car park and walk down the path and steps to the first classroom (the one with the lights on).

Visitors are always welcome. Anyone wishing to find out more about the hobby of amateur radio may come along or contact Guy Fletcher on 02 4751 6449, or Greg Arrell on 02 4739 8895, 0411 025 791 or greghome@fastlink.com.au

Greg Arrell

Vice President/Publicity Officer

Liverpool and District Amateur Radio Club Inc

The Liverpool and District Amateur Radio Club will be holding its annual auction at the Scout Camp in Cambridge Avenue, Glenfield, commencing at 11.00 am on Saturday, 18 July 1998.

The Club's famous sausage sizzle will again be there as well as cool drinks, hot tea and coffee.

The auction check-in time will be 1000 hrs and the auction proper will commence at 1100 hrs. The auctioneer will again be the inimitable Dave VK2KLV.

Enquiries can be made to 02 9896 5763, or via packet on 144.875 to either VK2IFS or VK2TKB @VK2TGB.#SYD.NSW.AUS.OC. The message should be titled LADARC.

Garry Barker VK2TSR
Honorary Secretary

Urunga Convention

What happened at the 50th Urunga Radio Convention over the Easter weekend of 11 and 12 April 1998?

The day was bright and clear, the doors of the Urunga Senior Citizens Hall opened at 8.45 am and registrations started. The pace was fast and furious as details were recorded and name cards filled in.

The first event of the weekend, a 7 MHz hunt, was not contested. Next there was a pedestrian event with three transmitters on 146 MHz. The winner was VK2BYY followed by VK2HJJ.

The next event on Saturday afternoon was a three transmitter 146 MHz mobile hunt. The transmitters were hidden in the Newry State Forest. First to the sites was VK2DGT, followed by VK2BYY. The two committee members who went out to collect the transmitters after this event lost them and a search party had to be sent out to locate the missing units, or wait for twelve hours for the RF-proof timing devices fitted to the transmitters to come to life again. The missing gear was found after the last event for the day, which was a talk in won by VK2BYY from VK2BAM.

There was a happy gathering of amateurs at the Ocean View Hotel for the dinner which started at 6.30 pm.

A brief welcome and history of the convention was given by VK2ZCQ (who has not missed a convention since 1952) and his XYL Marie.

In attendance were two of the amateurs who attended the first convention at Urunga in 1959. Alf Webb VK2UC and Leith Martin VK2EA gave the assembled audience a description of what the early conventions were like.

On Sunday morning the competitors fired up for the coming challenges of the day. The Urunga Scramble was won by VK2FA. VK2BYY won a pedestrian hunt on 7 MHz transistor radios only.

VK2HJJ won the mobile hunt with three transmitters on 146 MHz hidden in the Newry State Forest.

After lunch VK2BYY won a three transmitter pedestrian event from VK2DGT. A fun event talk-in was then run to finish off the day with two foxes to be found. VK2URK was the winner. Then came afternoon tea and the prize giving.

The next convention in 1999 will be the 50th birthday of the Urunga Convention, so come along and help in the celebrations.

VK2ZCQ
Urunga Committee

North East Radio Group

The NERG annual dinner was held at the Abbey restaurant in Diamond Creek on 22 April 22. Good food, good wine and good stories were all in abundance.

A highlight of the evening was the drawing of our door prizes.

The magnificent first prize was a two band Icom T7A transceiver most kindly donated by Duncan and Neville of Icom Australia. Thank you Icom! The T7A was won by well known fox hound Greg Williams VK3VT.

Second prize of wine, rose bush and "Mothers Night Off" free pizzas was won by Sue Renn, XYL of Bruce VK3JWZ. Congratulations Sue and Greg.

Over the next few months the NERGs will be visiting the Simpson Barracks Army Radio Museum, going on a family fun bike ride and taking part in the new ARDF competition starting on 22 August.

We are running Novice courses and welcome all amateurs, old and new, to our meetings held at St Helena Secondary College on the second Thursday of each month.

Remember, you can catch a NERG on 146.675 MHz FM simplex. We look forward to your contact.

Don Haslam VK3MDT

WIA (VIC) Eastern Zone Radio Club (Inc)

Inaugural Gippsland Technical Conference - 11 to 12 July 1998

With the view to promoting technical development and the sharing of knowledge in the areas of VHF, UHF and microwave amateur communications, the Eastern Zone Amateur Radio Club is sponsoring a technical conference. A variety of knowledgeable speakers will present information on aspects of amateur communications above 50 MHz, with an emphasis on weak signal operations.

Confirmed topics to date include: Receiver system noise and design long boom Yagis for 50 MHz; Meteor scatter propagation; and equipment for 10 GHz SSB.

Possible topics (to be confirmed) include: EME Communications; Comet Shoemaker-Levy; and How to Predict Tropospheric Ducting.

Update

Corrections to previous issues of Amateur Radio magazine

Repeater Link - DTMF Code Options

(published on page 21 of Amateur Radio, June 1998)

Will McGhie VK6UU has pointed out that when we redrew his Fig 1 for

publication, we accidentally substituted OR gates for the correct AND gates. The corrected Fig 1 appears above. It might be a good idea to amend your copy of the June 1998 issue of Amateur Radio now.

WIA News Item - WRTC-2000 (published on page 5 of Amateur Radio, June 1998)

David Pilley VK2AYD, the supplier of this news item, realised when he read his June copy of Amateur Radio that he had the WRTC-2000 event taking place in the wrong country!

WRTC-2000 will not take place in Croatia, but in Slovenia. Please amend this news item in your copy of the June 1998 issue of Amateur Radio magazine by replacing each occurrence of Croatia with Slovenia.

ar

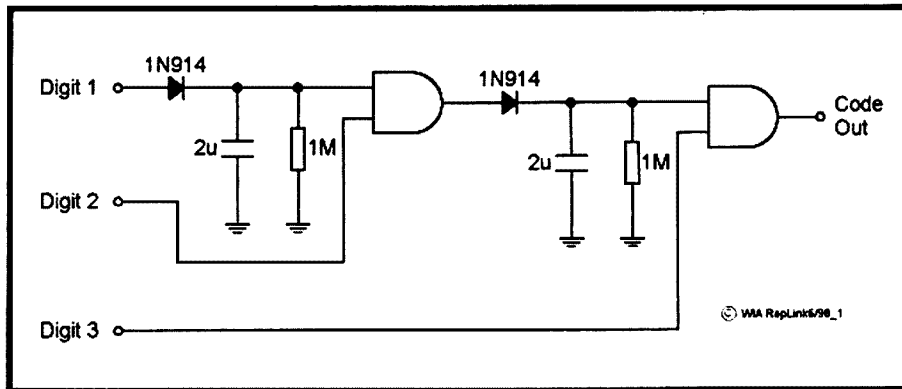


Fig 1

Space exists in the program for further speakers. The Conference will discuss technical matters only. Session Chairs will not tolerate the intrusion of politics!

The conference will be held at the Monash University Gippsland Campus, Churchill, located approximately 170 km east of Melbourne in the Latrobe Valley. Travel time from the Melbourne CBD is typically less than two hours, predominantly travelling on divided freeway-standard roads.

Proposed Program, Saturday, 11 July: 10.00, Registration; 10.30, Session 1 commences, and Partners Tour departs (if sufficient interest); 13.00, BBQ lunch (included in registration fee); 14.00, Session 2 commences; 16.30, Session 2 concludes; 19.00, Informal Dinner at a local Restaurant (details TBA - individuals to pay).

Sunday, 12 July 12: 10.00, Session 3 commences (if warranted); 12.00, Session 3 concludes; 12.30, BBQ lunch followed by Power Station Tour (if sufficient interest); 15.00, Conference close.

Overnight accommodation at Monash University can be arranged, at an estimated cost of \$20 per person. Individuals taking up this offer will need to provide their own linen and breakfast. Alternatively, participants can utilise any of the excellent local motels. A registration package will be forwarded to those who express interest. If you require any addition information, please indicate the nature of the information required in your Expression of Interest.

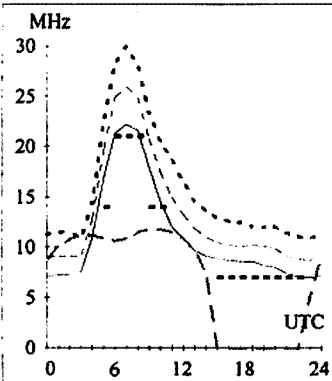
Activities on Sunday will be dependent upon interest, and may incur additional cost. If there is sufficient interest, a Proceedings volume will be published, at a cost to cover production.

If interested, please contact Peter Freeman as soon as possible at: PO Box 273, Churchill VIC 3842; peter.freeman@sci.monash.edu.au; VK3KAI@VK3BVP.#SEV.VIC.AUS.OC; or the Web Page <http://www-mugc.cc.monash.edu.au/~pfreeman/>
Peter Freeman VK3KAI

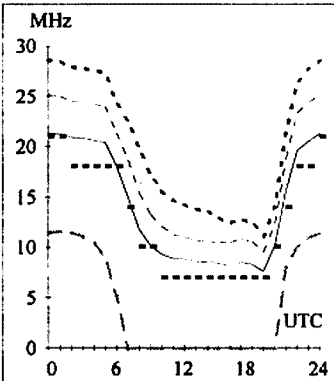
ar

Adelaide-Johannesburg 237

Second 4F5-6 4E0 Short 10042 km

**Brisbane-Christchurch 141**

First 1F5-6 1E0 Short 2517 km



HF Predictions

**Evan Jarman
VK3ANI****T Index: 79**

These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication.

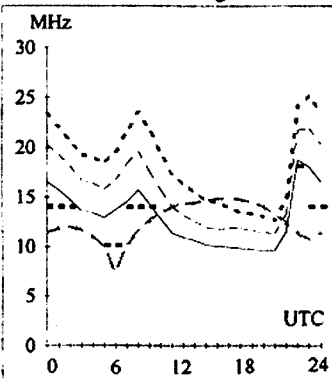
The frequencies, identified in the legend, are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

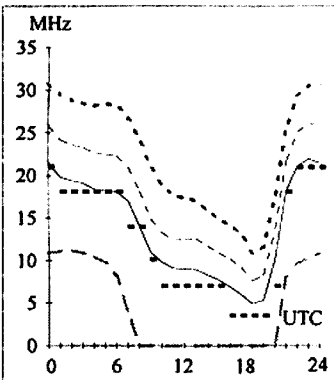
The predictions were made with the Ionospheric Prediction Service program, ASAPS v3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

Adelaide-London 132

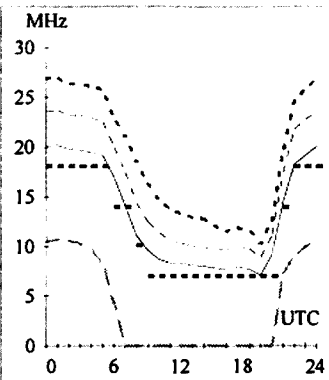
First F 0-5 Long 23755 km

**Brisbane-Honiara 21**

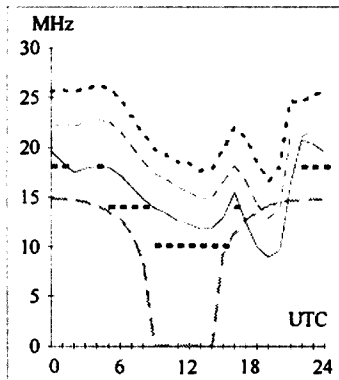
First 1F7-10 1E0 Short 2131 km

**Canberra-Auckland 102**

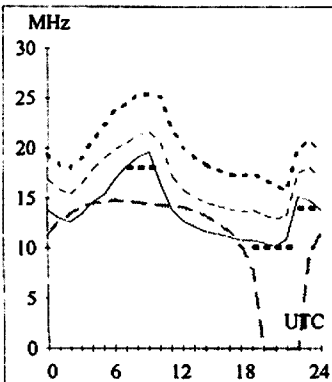
First 1F6-9 1E0 Short 2300 km

**Darwin-San Francisco 54**

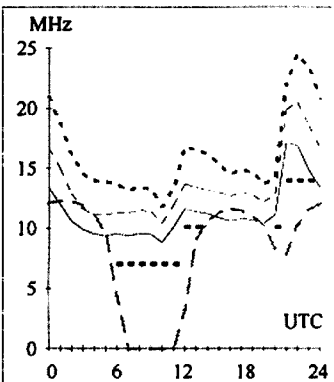
First F 0-5 Short 12316 km

**Adelaide-London 312**

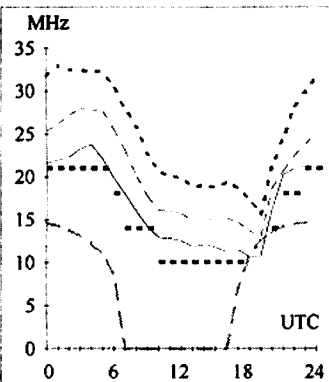
First F 0-5 Short 16269 km

**Brisbane-Montevideo 154**

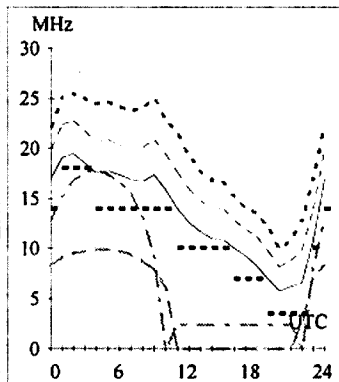
First F 0-5 Short 12431 km

**Canberra-Honolulu 50**

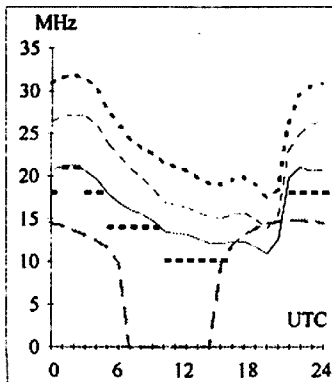
First 3F3-7 3E0 Short 8407 km

**Darwin-Singapore 295**

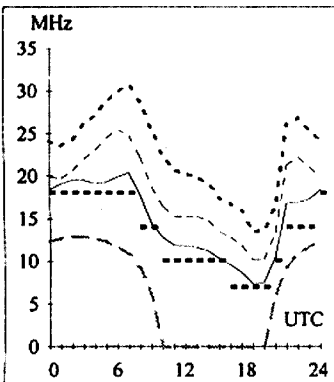
Second 2F12-20 2E2 Short 3351 km

**Adelaide-Los Angeles 66**

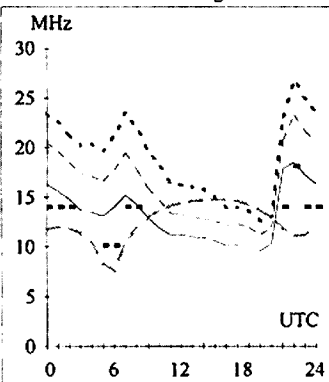
First F 0-5 Short 13158 km

**Brisbane-Tokyo 348**

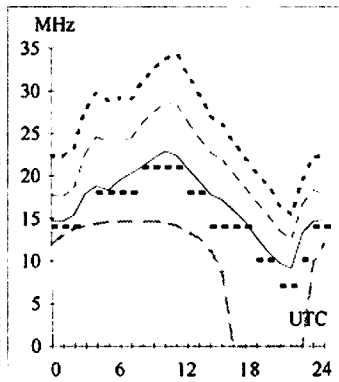
Second 3F6-11 3E0 Short 7159 km

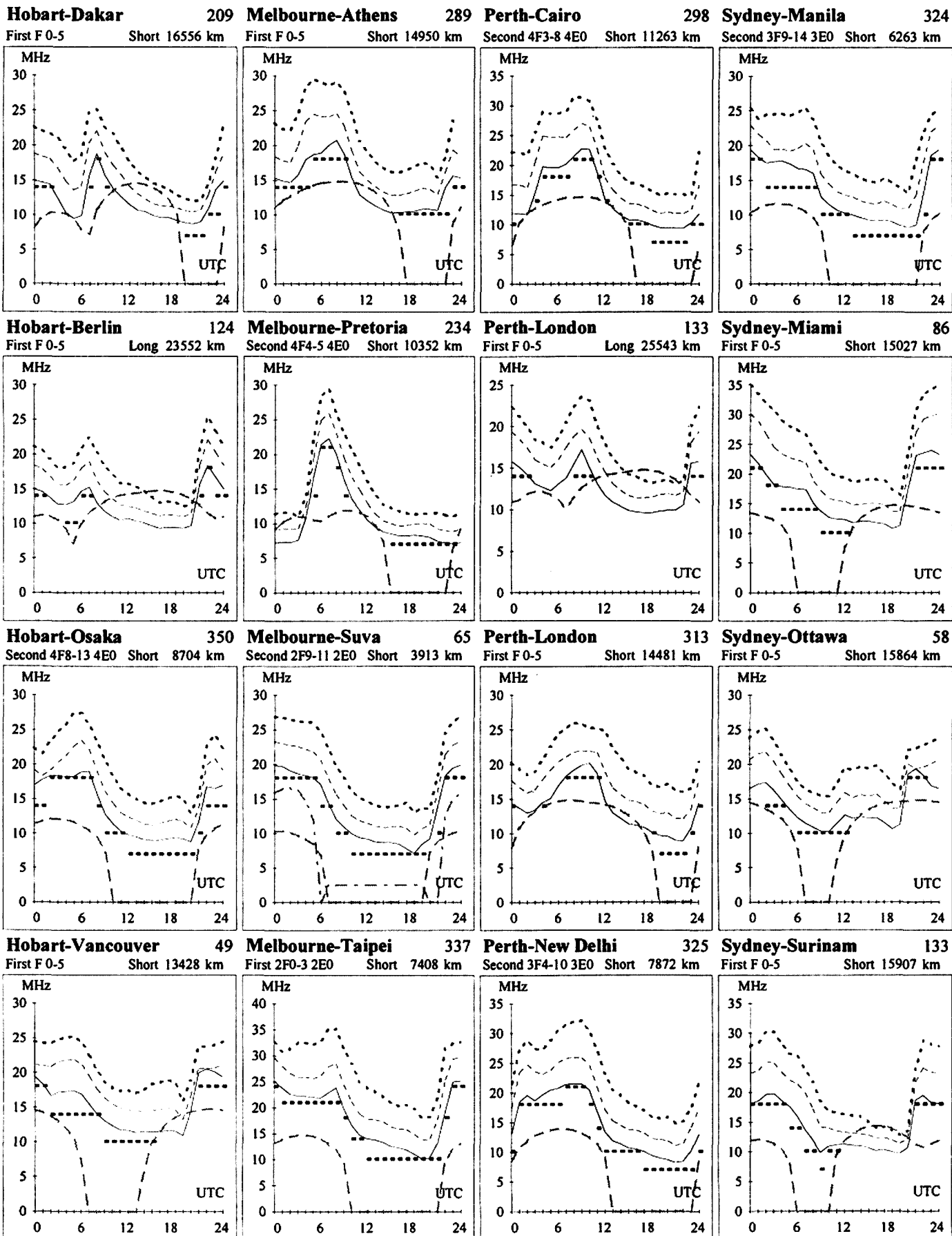
**Canberra-Paris 130**

First F 0-5 Long 23100 km

**Darwin-Tel Aviv 301**

Second 4F3-9 4E0 Short 11303 km





HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment. WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:
Postal: 3 Tamar Court, Mentone VIC 3194
Fax: 03 9584 8928
E-mail: vk3br@c031.aone.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX programs for IBM XT/ATs** *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.
- **HAM LOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone": The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia

VK2VN, 02 369 2008 BH, fax 02 369 3069.
Internet address rhg@ozemail.com.au.

FOR SALE ACT

- **3.8 m dish with C-Band linear feed and 85° k LNA**, suitable satellite TV, good condn, transportable on standard box trailer, currently stored in ACT, swap for 2 m or 70 cm txcvr. Neil VK2EI, 5 Loloma Place, Port Macquarie NSW 2444, 02 6584 9162 any time.
- **Hewlett Packard 851B/8551B spectrum analyser**, 0.01-12.4 GHz, \$350. Marconi **TF2300B FM/AM mod meter**, \$245. Heathkit **SB-620 monitor**, \$100. Ed VK1VP, QTHR, 02 6249 6348.

FOR SALE NSW

- **Galaxy DGT400 satellite digital receiver**, new in box, instruction book, ready for immediate use, \$480 ONO. Peter VK2BPO, QTHR, 029713 1831, bruno@jigsaw.net.au
- **Alden (made in USA) SW/HF receiver**, 100 kHz to 29.999 MHz in 1 kHz steps with fine tuning, LSB and USB, 12 V and 24 V DC, or 100 to 240 V AC operation, box is size of Epson FX80 printer, originally a dedicated weatherfax receiver, receiver and fax printer fully operational but paper obsolete, audio output via speaker or jack plug, \$250. Ted VK2EZQ, QTHR, 02 9477 7834, 019 460 437.
- **Yaesu FR-101 receiver**, digital, fully optioned, 1.8 to 148 MHz, manual, good condn and working order, \$300. **Yaesu FT-75B**, 11 xtal frequencies, AC supply, DC supply, mobile mounting bracket, manual, good condn and working order, 80 to 10 metres, no WARC, \$100. Ray VK2COX, QTHR, 02 6345 1911.

- **Icom IC-746 HF + 2 m txcvr**, inc desk mike, 6 months old, as new in box, \$2150. James VK2LJN, 0412 242 024.
 - **Yaesu FT-736R 25 W 2 m/70 cm all mode txcvr**, complete with in-built PSU, DC power cable, mic, manuals, excellent working order, used three months only, two year warranty, \$1700 ONO. A Wettasinghe VK2IHV, QTHR, 02 9876 2814.
 - **Kenwood TS-820S txcvr**, telereader RTTY/CW, multi-band vertical antenna, power meter, coax, \$650 ONO. H Pickett VK2AHP, 02 9746 6858.
 - **Kenwood TS-900 SSB txcvr with PS-900 matching PSU**, original mic, manual, SWR meter, excellent condn, \$200 ONO. Lorraine Mencinsky L21156, 02 9953 1245, starpaws@ozemail.com.au
 - **HP Vectra PCs**, 1 of 486, 7 of 386, 1 of 286, various configurations, price range of \$250 to \$35. John VK2WW, 02 9546 1927.
 - **Yaesu FT-736R VHF/UHF base station txcvr**, 2 m, 70 cm and 6 m module fitted, full satellite operation, VGC, \$1650. **Yaesu FT-101E HF SSB/CW/AM base txcvr**, 100 W, VGC, \$400. Chris VK2YMW, QTHR, 02 9487 2764 (AH).
 - **Kenwood TS-850SAT with DRU2 + voice units**, SSB and CW filters, MC-60A desk mic, DSP100 unit, SM-220 station monitor with pan display unit, all in excellent condn with service and instruction manuals, in original boxes, offers! Will separate if necessary. M G Meyer VK2RV, 02 9371 8854, 0418 210 457.
 - **Vintage AWA Type C1070 modulated oscillator** including information and valves, see *Electronics Australia* May 1998. S Dogger VK2KSD, QTHR.
- ## FOR SALE VIC
- Estate of the late Stan Dixon VK3TE, **IC-207H VHF/UHF dual band FM txcvr**, mint condn, only used a couple of times, with all manuals and leads, \$675. **13.6 V 20 A (continuous) heavy duty power supply** for the IC-207, \$200. **20 m quarter wave ground plane antenna**, as new, complete with radials and instructions, \$50. Back issues of **RSGB 'Radcom' magazine**, full years 1975/76/77/79/80, part years 1973/74/75, will not separate, offers around \$65 for the lot. Harold VK3AFQ, QTHR, 03 9596 2414 any time.
 - **Icom IC-706 HF/6 m/2 m multi-mode txcvr**, complete with original packing and accessories plus OPC-581 3.5 m separation cable and MB-63 mounting bracket, hardly used, \$1600. **Icom IC-275A 2 m FM/SSB/CW txcvr**, DC and built-in AC supply, 25 W, 9600 ready, wide Rx, late model, with original packing and accessories, \$750. **VHF Hi-hand cavity filter**, \$70. Adam VK3ALM, 015 362 799, 03 9794 7873.
 - **Yaesu MD1B8 dynamic microphone**, as new, up down, 8 pin, offer. **TET HB33 mini beam**, 10/15/20 m, 3 element, performs well, offer. Peter VK3AJP, 89 Elizabeth Street, Kooyong VIC 3144

Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

Return Loss

The April *Technical Abstract* which describes a "Return Loss" bridge will confuse many amateurs because the term "Return Loss" is rarely used in amateur technical articles and serves no useful purpose in radio technology. The term is borrowed from telephone/telegraph line technology and its accepted definition is "Return Loss (RL) is a measure of the match between two impedances either side of a junction".

$$RL = 20 \log(Z_1 + Z_2) / (Z_1 - Z_2) \dots \text{decibels.}$$

That expression in radio theory is the reciprocal of Reflection Coefficient (p) in dB.

$$RL = 20 \log 1/p = -20 \log p$$

Return loss is not as stated in the *Technical Abstract*; it is not "a different way of expressing SWR" and it is not "the power taken by the load".

The circuit described does not measure return loss. It measures the ratio, reflected volts to incident volts, that is the Reflection Coefficient at the measuring point and, for reasons known only to the author, expressing that ratio in dB changes the name to Return Loss.

Reflection Coefficient is an important ratio and its measurement in antenna systems is an important measurement; knowing that ratio leads to the determination of other important parameters, the most familiar and most important of which is SWR.

$$SWR = (1+p)/(1-p) \text{ and } p = (SWR-1)/(SWR+1).$$

SWR can be expressed in dB but no one suggests that it should then be given another name. It is sometimes useful to express p in dB to relate the input and output conditions: P_{dB} at the input = p_{dB} at the output plus twice the line loss in dB.

Lindsay Lawless VK3ANJ

Box 760

Lakes Entrance VIC 3909

[Our *Technical Abstracts* contributor, Gil Sones VK3AUJ, points out that Return Loss is still a widely-used parameter in some areas, notably TV transmitting antennas and other high-power applications. Ed] ar

WANTED NSW

● BWD 509B oscilloscope schematic and data. Hy-Gain V 23 channel CB txcvr. J Griffiths VK2BGG, QTHR.

● Pactor modem and/or software. Manual for PK232 to copy or buy. Firmware for PK232 MBX updated for Pactor. Ted VK2EZO, QTHR, 02 9477 7834, 019 842 437.

● Philips PM3230 oscilloscope circuit diagram. Brian VK2AZW, QTHR, 049 842 419.

● Kyokuto FM144-10SXR11 2 m txcvr and Cossor 1029M Mkl1 mini-CRO handbook data, circuits, etc, will pay costs. A G Mulcahy VK2ACV, QTHR, 02 9791 0581.

WANTED VIC

● Yaesu FT-912R 23 cm mobile txcvr, in good condn. Bert VK3DVY, 03 5221 6804.

● Swinging power choke, 5-25 H, 30-300 mA, eg A&R type 983-1a or equivalent. Also microphone or audio transformer 600 ohm to 50/100 kilohm. Roy VK3ARY, QTHR, 03 9807 4798.

WANTED QLD

● Radio Handbook by William Orr, edition with HF linear using pair of 4x250 tetrodes, alternative to book purchase a photocopy of article OK, pay costs. Ron VK4BL, QTHR, vk4bl@tpgi.com.au

WANTED SA

● FT-901D series handbook including circuit diagrams and workshop manual. Tech PV58 vacuum tube volt meter handbook and circuit. Will pay for any photocopying. Terry VK5AAL, QTHR, 08 8261 7571.

WANTED WA

● Roller inductor for home brew ATU project. Peter VK6AQ, QTHR, 08 9307 4960 AH, pasmith@physics.uwa.edu.au

MISCELLANEOUS

● The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

● If you got your licence before 1973 you are invited to join the Radio Amateurs Old Timers Club. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

● Liverpool Club Auction, Saturday, 18 July at Scout Camp in Cambridge Avenue, Glenfield, check-ins at 10 am, auction commences 11 am. For further details contact Garry VK2TSR, Honorary Secretary of LARDC, at PO Box 690, Liverpool NSW 2170, or 02 9631 9005 (BH).

ar

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Make sure you sell
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● TS-430S, \$795. FV-101Z ext VFO, \$100. AWA F242 Dist/Anal, \$800. NJZ-900 analogue phone tester, \$1500. Marconi 2955/2960B system, complete, amps/tacs/MPT1327, \$12,500. FM-900 2 m EPROMs, \$30. 10 MHz CRO, \$140. AWA RT-80 VHF/2 m Hi-Band, \$25. 500 MHz frequency counter, \$150. Logimetrics sig gen, counter, 1 Hz res, 50 kHz-80 MHz, \$495. Arlec line conditioner, 500 VA, \$380. 4CX350F, \$180. Lee VK3GK, 03 9544 7368, 015 810 101.

● Kenwood TS-520S, ext VFO-520S, MC-50 mic, near new 6146B finals, exc working order, \$525 ONO. Brainer 2 m base vertical antenna, VGC, \$150. Rita VK3NRT, QTHR, 03 9798 3248.

● Computer monitor, disk drive, power supplies, manuals, books, disks, CW/RTTY software sends random groups any speed for CW practice, etc, good working order, the lot \$25 ex QTHR. Andy VK3UJ, 03 9726 8879.

● Kenpro stay bearing for 50 mm (2 inch) antenna mast, brand new, all bolts, etc, \$40. Laurie VK3DPD, QTHR, 03 9818 6009.

FOR SALE QLD

● Icom IC-740 txcvr, incorporates excellent rxcvr with 2 VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, very good working order and appearance, good reports on transmissions on all bands, \$590, call for copy of specs sheet. 0-250 V auto transformer, new, 1.8 A, \$55. Kenwood AT-120 ATU, very compact, great for mobile use, \$90. Redifon R408 commercial marine radio receiver, commonly installed on Merchant Marine vessels 1970-80, coverage from 13 kHz to 28.3 MHz, designed particularly for CW receiving, bandwidth can be variably tuned from 80 Hz to 8 kHz, triple IF, fully transistorised and includes original manual and circuit diagrams, call for copies of spec pages, \$450 plus freight (25 kg). John VK4SZ, QTHR, 07 4061 3286, johnb@comnorth.com.au

● Kenwood TS-430S, both manuals, good condn, s/n 6050959, \$750. Alan VK4IH, QTHR (as VK4CVU), 07 4685 2391.

● Kenwood TS-140S with IF-10C interface and all manuals, good condn, \$600. Dick VK4DIC, 07 3264 1655.

● Icom IC-746, latest model radio with 100 W on HF, 6 and 2 m, new, still in box with warranty, swap for "what have you?", sell for \$2800. Bob VK4SWR, 07 3348 7616 (AH).

FOR SALE SA

● Yaesu FT-890, as new, \$1000. Yaesu FT-290, with battery pack, case and Tono 100 W amplifier, \$450. John VK5ARK, Renmark, 08 8586 6127.

● Kenwood TS-50S, little use, as new, mint condn, still in box, s/n 50403113, \$1400. Roger VK5NEW, 04 1787 5989.

FOR SALE WA

● Yaesu FT-990 HF transceiver, immaculate condition with desk mic, original box and manuals, \$2300. 7 element 2 m crossed Yagi beam, \$60. 13.5 V @ 3 A power supply, \$40. SOTA solid state HF linear amplifier, 4 W in for 100W out, 13.5 V operation, \$180. Trio 1 kW low pass filter, \$40. Pair 4CX250 valves and HF bases, \$30. 1296 MHz to 144 MHz Rx converter, \$40. German Morse key, \$40. Receiver noise generator and alignment aid, \$50. Phil VK6APH, 08 9245 2973 (re-advertised - phone number in last month's *Amateur Radio* was incorrect).

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Weekly News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blenkins Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KJR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au Web: http://www.tbsa.com.au/~wiviac/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Rodger Bingham Secretary Peter Harding Treasurer John Presotto e-mail address: wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powerup.com.au	VK4HD VK4JPH VK4WX	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Ian Hunt Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6KZ VK6ZLZ VK6OO	146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busselton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Ron Churcher Secretary Paul Godden Treasurer John Klop Web: http://www.wia.tasnet.net	VK7RN VK7KPG VK7KCC	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz). Note: All times are local. All frequencies MHz.				

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Amateur Radio



August 1998

Volume 66 No 8

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- **A Sensitive Field Strength Indicator by VK3XU**
- **One Transistor Frequency Synthesiser by VK1PK**
- **Review of the Icom IC-T8A Tri-Band Handheld**

Plus *lots of other articles, news and special interest columns*

QMS - 7

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If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with your local Post Office before contacting the registered office of the WIA.

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Cover

Lest We Forget! Don't forget the Remembrance Day contest on 15 and 16 August. A World War II vintage headphones and Morse key are pictured on a background of a WW II recruitment poster.

[Photo by Ron Fisher VK3OM]

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, *How to Write for Amateur Radio*, is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

BACK ISSUES

Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

PHOTOSTAT COPIES

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society Founded 1910

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Viewpoint

Editor's Comment

Electronic Repairs

In the June issue of *Amateur Radio* I had something to say about repairing TV sets (among other things). I suggested that because of the reliability of modern electronic equipment, thus seldom needing repair, there isn't much work for the TV serviceman. I also suggested that our own 22 year old colour TV had performed well in needing only one significant repair in its lifetime. I thought at the time that perhaps I was risking yet another demonstration of Murphy's Law; and I was, on two counts!

Before the June issue had emerged from the printers, our old TV set had developed another fault (same symptoms as before, different cause) and needing an hour or more to find the fault and fix it. And it now has an intermittent as well, causing the colour to be absent at switch-on, but "come good" after a period of five or ten minutes. So I stuck my neck out and nearly lost my head! Murphy triumphed yet again!

Then a letter arrived from Horst Leykam VK2HL, of Northern Beaches TV Rental and Service Co. He agreed with me about increasingly complex amateur transceivers, but told me plainly that I was wrong about TV service. To quote, he does "about 1500 repairs a year, and my workshop (and those of my competitors) are always full of sets waiting to be repaired". He assures me "the service industry is alive and well". I would like to thank Horst very much for his contribution towards putting me right. I guess we just have to accept the fact that nothing man-made keeps going for ever, particularly when its quality is dictated by market pressure. If you want high reliability you must pay for it.

One way in which high reliability is achieved in aeronautical or spacecraft applications is by use of back-up systems so that not only is the primary system "fail-safe", but its functions are handed over automatically to a second system in the event of failure; and maybe even a third after that! Navigation computers may be up to five in number, all tackling the same problems and "voting" to determine which solution is the best in the event of disagreement! But no one could afford a TV set built in accordance with these techniques!

Bill Rice VK3ABP
Editor

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■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2OT
Federal Public Relations Co-ordinator

Peter Naish WIA Federal President Revealed

This month it is rather appropriate that we take a more detailed look at the person who is the Federal President of the WIA.

Having been elected as Federal President of the WIA and therefore Chairman of the Federal Council at the 1998 Annual General Meeting, Peter has been a Federal Director for three years of which two years have been spent serving as Secretary.

In total, Peter has been involved with the Federal Executive for five years, starting out as an Alternate Federal Councillor for VK2 and eventually became the Federal Councillor for NSW.

Peter Naish VK2BPN was first licensed as G3EIX in 1948 so 1998 is very special as it marks his 50th year in amateur radio.

Interests in Amateur Radio

HF DXing, mostly on CW, is Peter's main on-air activity, although he professes to not having much time for it. Regular contacts are made on frequencies between 160 metres and 70 cm with 20 metres as the favourite.

Interest in amateur radio began early with him and was promoted by the fact that, as a young person, he lived near a ham in the UK. Having made a crystal set, the young radio enthusiast found quickly that because you couldn't discriminate, the signal of the radio amateur operator was heard whenever he was on air and Peter was listening.

Peter went on to study for his licence which he gained when he was 16. Interesting to note that he passed the CW examination at the speed of 12 wpm. In awe of the peaks in the sunspot cycle at

the time, he built a transmitter/receiver out of surplus junk. The newly licensed amateur then proceeded to work the world. The radio used was a seven watt crystal oscillator PA with a single crystal.

30 September 1948 was a rather momentous occasion as that was when Peter Naish's first transmission was made on CW. The writer can attest to this fact as he has seen the original log book. The frequency was 7.063 MHz, and you will remember that one crystal. Peter couldn't afford modulation, and wasn't allowed to use it anyway, as for the first year telegraphy was the only mode permitted.

Those were the days when logs had to be examined and signed off by the local radio inspector, after which, if 12 months had passed, the operator was then allowed to use telephony. It was at this stage Peter

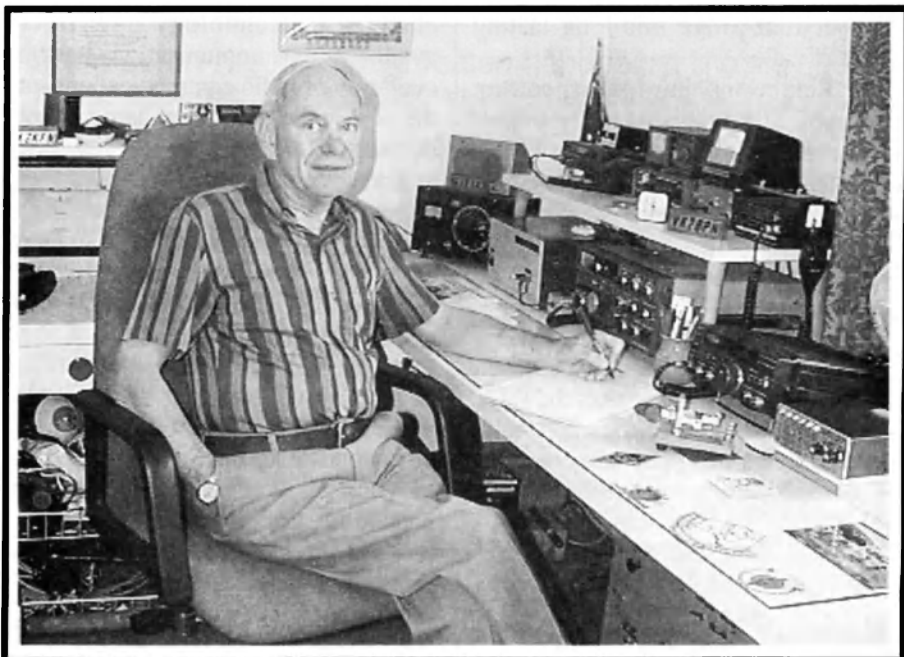
went out and bought an audio amplifier which he used for modulation purposes.

Australia

Peter came to Australia first in 1956 and took out the callsign VK2BPN. He had worked for Marconi in the UK and came here to install television Channels Seven and Two at Gore Hill on Sydney's North Shore. The history stands that Peter had the rather enormous privilege of having actually thrown the big switch to turn these media show-pieces on. He was also involved in the installation of the 10 kilowatt transmitters. Peter used to put Kodachrome 35 and Ektachrome photos to air, but of course they came out black and white at the viewer end.

It was at this stage that Peter's career took a different geographical turn and he made his way to South America. But, he was to come back to Australia in 1967 in order to install a Channel Two transmitter in each of the state capitals of Brisbane, Adelaide and Perth. It was then that Peter decided to settle here and he has since become an Australian citizen.

Peter left Marconi and started work at STC as a radio design engineer. STC is now Alcatel having changed in 1990. Peter has served the company for 31 years switching his role to the marketing of radio systems. He has project managed a number of major radio initiatives for Alcatel.



Peter Naish in his radio shack at home in Sydney.

Philosophy for the Future of the WIA and Amateur Radio

There are many areas Peter would like to see action in for the future good of amateur radio and the furthering of the role of the WIA. Some of these are to:

- Get back to working as a team and focus on the main core business. That is to protect and possibly improve or enlarge on the privileges enjoyed by the radio amateur through active liaison with the Australian Communications Authority (ACA) in Australia and the International Amateur Radio Union on a more global scale.

- Respond to the wishes or desires of the radio amateur and provide better service from a federal point of view to support the Divisions in serving their individual members.

- Maintain and enhance *Amateur Radio* magazine. The visible presence of the federal body is this high profile publication and the challenge is to communicate through this journal to the membership in an era when there is much competition from well endowed commercial ventures.

- Encourage more young talent into amateur radio by providing a more exciting and longer lasting hobby environment compared with some of the other transient technologies we see today. There will always be a place for radio. The commercial interests and the use of the spectrum prove this long lasting aspect of radio.

- Retain and improve spectrum privileges. This brings us to the subject of one of the most important issues concerning the WIA. The WIA is charged with protecting amateur use of the bands. This is in the face of tremendous and increasing pressure from commercial interests.

- Strengthen some of our specialist committees such as the ACA Liaison team, which is the focal point of the WIA. This team fulfils one of the major roles in the charter of the Institute in carrying the role as a national representative body on behalf of the Divisions of the WIA throughout Australia.

- Improve the WIA's image externally to encourage more people into amateur radio. Peter says "Just a decade ago we experienced an influx of CBers.

WIA ACA Liaison Team in Action

The WIA has submitted a response to the ACA's invitation to comment on the proposed spectrum licensing of the 9 cm band from 3.410 to 3.60 GHz in Australia.

This is only one of a number of bands which are possibly under threat from commercial interests and is shared with mainly radiolocation services. While the arrangements are quite amicable at the moment, the WIA is very much in touch with the ACA in a bid to preserve amateur access to these frequencies.

According to *Q News*, the applicants for the 9 cm band are from the telecommunications sector, wanting the band for 'wireless local loop' products whereby new telephone companies can directly enter the local call market without recourse to Telstra's wires.

It should be remembered that most popular amateur frequencies from 420 MHz upwards are available to the amateur service only on a secondary basis.

A small percentage of these frequencies are being used by amateurs and commercial interests reportedly are seeking use of these frequencies for their own purposes. Various sources report that few VKs use the narrow band segment of the 9 cm band and there is only one beacon VK5VF. (If anyone knows of any more usage, please advise the editor of *WIA News*.)

The WIA ACA Liaison team is continuing its close contact with the authorities on the issues surrounding the use of the spectrum.

WIA Business Plan Being Formulated

One of the tasks the Federal Executive is undertaking is the formation of a business plan which will enable the WIA to prepare for entry into the 21st century. This is considered necessary due to the changes in technology now freely available for communications and the evolution of radio communications into the new modes which are being rapidly developed.

Foresight exhibited in WIA awareness of new modes of communication, as displayed in a business plan and strategy,

should attract a new generation of communications enthusiasts. It is expected this will serve to build up the Institute's position and strength within the sphere of experimentation in the field of communications.

A strategy will be available later this year for discussion and for input from Divisional representatives. The strategy will contain a number of objectives and responsibilities which will take the WIA through into the new millennium.

Now we have the Internet. We should encourage people from there and show that amateur radio is alive and well."

After having spoken to Peter, this scribe has come away with the notion that he is a classic amateur. He built his own gear and has modified ex-service equipment to the stage where it has made many contacts. Peter says that the 'surplus gear' might not have been exactly 'EMC compliant', but fully conducive to modification and adaptation to the amateur requirement.

As I walked out of the door on that cold June evening in the north western suburbs of Sydney, I felt I had gained an insight into an amateur of the true spirit. I went away impervious to the cold with a warmth in my heart I felt when first hearing the amateurs talking on AM on 40 metres when I had just completed my first crystal set, embarking on the journey to becoming a licensed user of amateur frequencies just as Peter Naish did 50 years ago.

QSLs for VK5MIR Contacts

A situation has arisen regarding QSL arrangements for "voice" contacts made with Andy Thomas VK5MIR during his mission on the MIR Space Station.

Back in January, when the matter was originally discussed with Andy, it was intimated that the National Aeronautics and Space Administration (NASA) would probably take care of production and handling of the relevant QSL cards. It appears that this has not occurred.

QSL information put out by the MIREX organisation concerning contacts with MIR refer only to contacts with the Space Station and not to specific contacts made when Andy utilised his unique Australian callsign.

It is understandable that the American authorities may have not recognised the major significance attached to the operations of Australia's first astronaut and the first ever use of any Australian radio callsign from space. However, to the Australian public the event was one of tremendous interest and significance. Excellent media coverage was given to Andy's exploits and to amateur radio as a hobby. It would be a great disappointment if no special commemorative QSL cards were available.

It has been suggested that the South Australian Division could arrange for such a card to be produced and distributed to those who submit claims for voice contacts with VK5MIR. A recent General Meeting provided approval for the Division to go ahead and take action on this matter.

It should be noted that packet radio contacts with MIR had to be addressed to the callsign of ROMIR and as such are covered in the QSL arrangements made through the MIREX organisation.

I am in touch with Andy Thomas and the matter of a "special" QSL card has been taken up. At present Andy is investigating the situation and we await advice from him. There is apparently still a likelihood that NASA may be prepared to take some action to help in this matter.

Expressions of Interest for the Production of Amateur Radio

Very encouraging is the way the Federal Executive has referred to the response to the call for expressions of interest for the production of *Amateur Radio* magazine.

Due to the fact that *Amateur Radio* is seen as a house journal and a vehicle for news on all aspects of amateur radio, a spokesman for the executive says it is their wish to maintain and improve on the already high standard of this publication. This will be a major consideration when all responses are looked at.

It is also pointed out that, as Andy used the Australian allocated callsign mainly when over the Australian/New Zealand area, it would involve VK/ZL stations in far less postage costs to obtain a QSL card via local channels.

For the moment it is suggested that those who wish to obtain a QSL card for

Meanwhile, a study of contents of the WIA journal is occurring and this will lead to a delivery of more of what the general membership wishes to see in such a publication. Articles and news are to come under special examination. After the process is completed it is expected that the special requirements of the reader will be taken into account, resulting in a more readable communicative publication, without losing the high standard of quality that is being maintained at the moment.

a "voice" contact with VK5MIR should not send their QSL and contributions to the USA QSL point for VK5MIR contacts, but instead wait until the situation is resolved. You will be advised as soon as possible as to the final result.

[Ian Hunt VK5QX]

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

420-450 MHz is wanted by Australian commercial interests
RF emission regulations threaten handhelds, mobile rigs, and suburban home stations with bureaucratic limits

More of **7 MHz** is wanted by global broadcasters

RENEW YOUR MEMBERSHIP RECRUIT NEW MEMBERS

WIA action has:

- Cut the cost of licence fees
- Cut fees on beacons and repeaters
- Improved licence conditions
- Retained access to 50 MHz and 576 MHz; and more!

The WIA maintains representation:

- At World Radio conferences
- To the ACA
- On the Radio Communications Consultative Committee



Strength in numbers - Subs help pay

Your Hobby

Your Voice

■ Test Equipment

A Sensitive Field Strength Indicator

Drew Diamond VK3XU
45 Gatters Rd
Wonga Park VIC 3115

Like our SWR meter, dip meter and multimeter, the field strength (FS) indicator is one of those tools which finds frequent use, both inside and outside the shack. Some applications include checking for antenna and feedline radiation, sniffing for unwanted RF energy in interference investigations, probing RF generating equipment, such as oscillators, and for the "closing-in" phase in fox-hunting activities. More later.

The usual, or traditional, FS indicator is a passive device, generally only being of use where substantial amounts of RF power are generated. But there are instances where greater sensitivity is required, for example in QRP, or circuit testing work. Offered here are details of an untuned, sensitive FS indicator which can detect at considerable distance, using the E-field pick-up, the signal radiated from a 5 W transmitter from 1.8 to at least 148 MHz.

Circuit

The signal input, from either rod or loop, is applied to a two-diode voltage doubler

detector. The positive DC voltage developed across the first 10 n capacitor is applied to the 100 k sensitivity pot. A voltage gradient is thus established along the travel of the pot.

A common LM-386 is wired here as a DC, or servo amplifier. Circuitry inside the 386 sets the gain, and establishes the quiescent (no-signal) DC output at pin five to half supply voltage, in this instance +4.5 V. A voltage divider comprising a 3.3 k resistor from +9 V, 500 ohm trim pot and another 3.3 k to chassis produces a voltage of about +4.5 V at the slider of the trim pot.

The 1 mA meter is connected in what is virtually a bridge arrangement. Now, the relatively small positive DC detected signal applied to the (+) input of the 386 is amplified, causing the DC output at pin five to move in a positive direction, thus unbalancing the bridge and proportionately driving the meter.

Construction

If you have a nice big, clear-faced 1 mA meter, then I suggest you use it, for there

may well be applications where it is necessary to read the meter at a distance.

Meter size rather dictates your box size. Mine is housed in a home-made aluminium box measuring 70 x 70 x 125 mm (see Photo 1). A square of plain printed-circuit board is fixed under the BNC (or whatever connector type you prefer) connector mounting nut. Only the detector circuit wiring is critical, and these two diodes and two capacitors should be mounted as near the input connector as reasonably practicable.

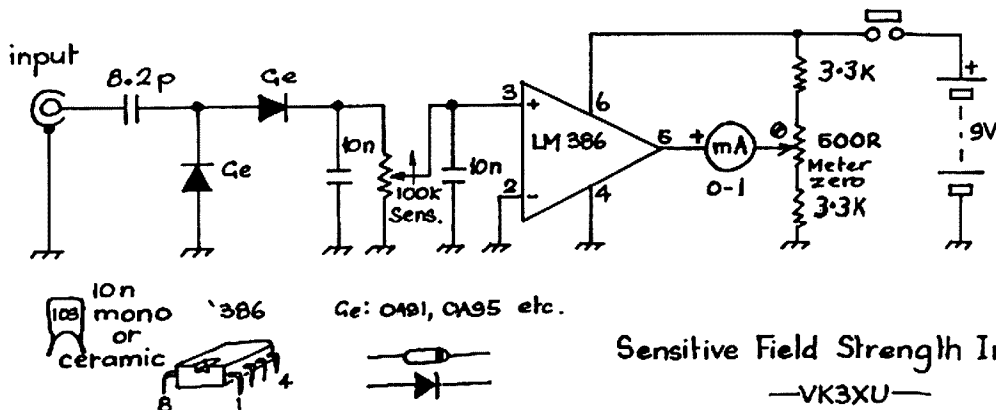
All diode and capacitor leads should be short, but leave sufficient lead length to allow your long-nose pliers to act as a heat-sink when soldering these. That is, grip the part with the jaws of your pliers between the component body, and solder joint.

My 386 is soldered to a "paddyboard", which in turn is soldered to the main board (see Ref 3), and a second small pad-board accommodates the 500 ohm trim pot and 33 k resistors. But any construction method that you prefer, even ugly style, will do.

Some electronics suppliers have a clip and holder for the 9 V "transistor" battery which powers the instrument. Fit the battery in the bottom of the case behind the meter, thus giving a low "centre of gravity" to the box.

Operation

Before applying power, check your wiring and component locations and confirm that all is correct. Set the 500 ohm trim pot to mid travel and the 100 k sensitivity pot to minimum signal. Have no pick-up devices connected to the input. Switch on. Set the "meter zero" trim pot



so that the meter indicates zero. Observe that clockwise rotation of the sensitivity pot causes no significant deflection, up or down, of the meter needle (you may see one or two minor divisions of deflection, which is no great trauma).

Some pick-up devices will be required, and a selection is shown in Photo 2. For simple electric (E) field work, we need a rod of copper, steel or brass, about 300 mm long. A knob must be fitted to the end to avoid eye poking accidents. This pick-up finds general application in E-field detection.

To detect (mainly) the magnetic (H) component, we use one of the three loops shown. The small loop with the BNC lead finds use in sniffing energised circuits, such as oscillators, RF amplifiers, powered tanks and so on. It is two turns of insulated hook-up wire, about 10 mm diameter, soldered to a BNC socket. It is handy for checking that an LC or crystal oscillator is working. It is also good for probing into tight corners and sniffing for RF energy, perhaps in places where it should not be.

The second loop comprises three turns of hook-up wire, about 50 mm diameter, soldered to a BNC plug. It is similar in application to the previous loop, but is rather more sensitive. Use it to detect signals on transmission lines, radial wires, guy wires, antenna elements and so on. Note that maximum signal is detected

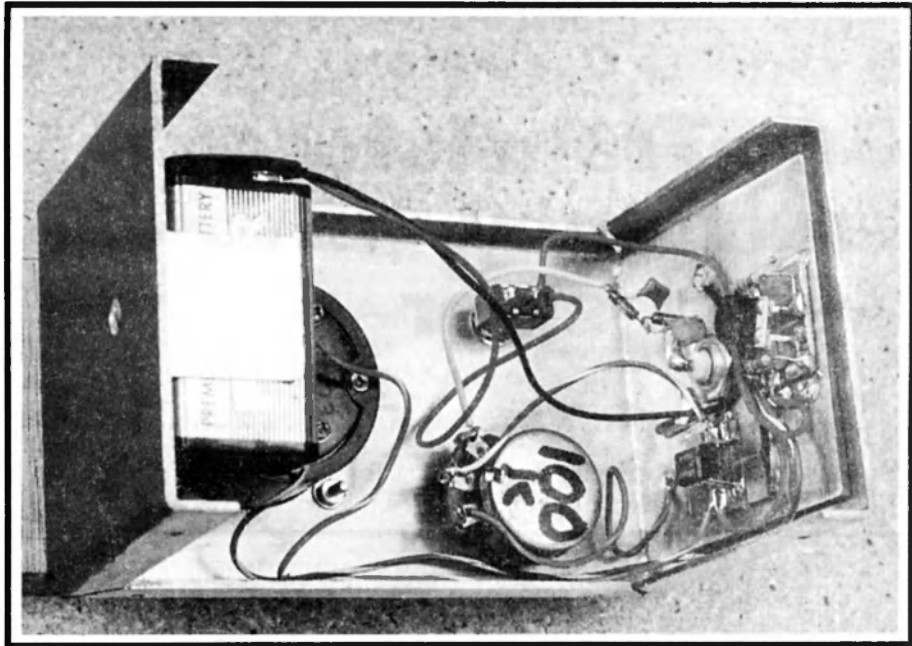


Photo 1 - The sensitive field strength indicator housed in a home-made aluminium box.

when the plane of the loop is parallel to the signal-carrying conductor.

The third, and largest loop, is made from 1.25 mm gauge steel "tie-wire". It is a single loop of about 350 mm diameter attached to a BNC plug-terminal adapter. Similar in application to the previous loop, it is more sensitive again. An HF signal may be detected at some distance from the radiating source.

For close-in fox-hunting work, your loop or antenna is connected, via coax if

required, to the FS input. To provide a correct match to the antenna, it may be necessary to include a 50 ohm through termination at the FS input. Reduce the sensitivity as you close in.

References and Further Reading

1. *Test Equipment for the Radio Amateur*; C Smith G4FZH; RSGB Publications.
2. *Radio Communication Handbook* (any edition, but preferably the 6th); RSGB.
3. "Paddyboard" *Circuit Construction*; D Diamond, AR Feb '95.

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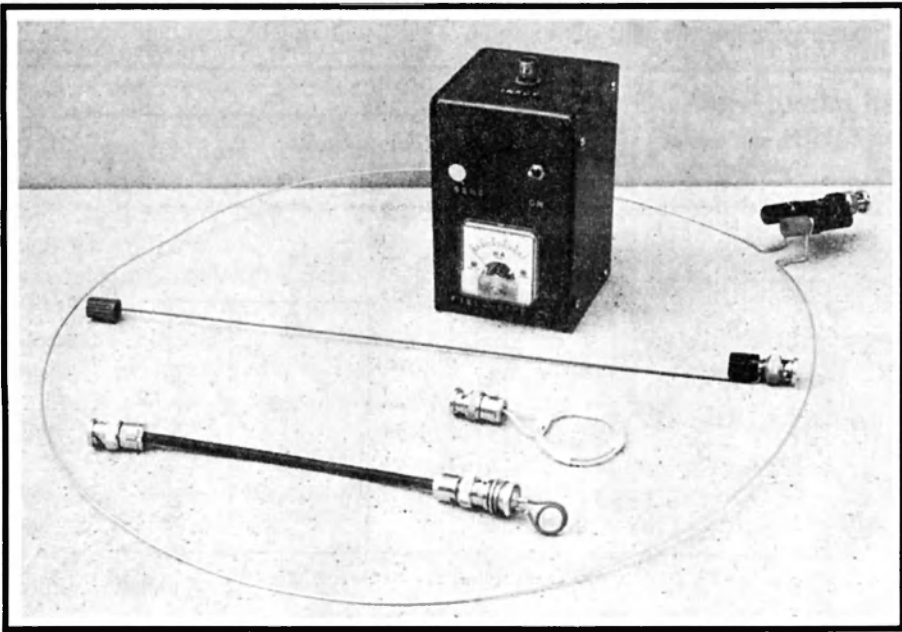


Photo 2 - The sensitive field strength indicator with the pick-up devices.

IARU Region 3 ARDF Committee Chairman Retires

The WIA has recently been advised by the IARU Region 3 Secretariat in Japan that the Region 3 ARDF (Amateur Radio Direction Finding) Committee Chairman Chen Ping BA1HAM has retired from that post and that the directors have temporarily appointed Yoshio Arisaka JA1HQG.

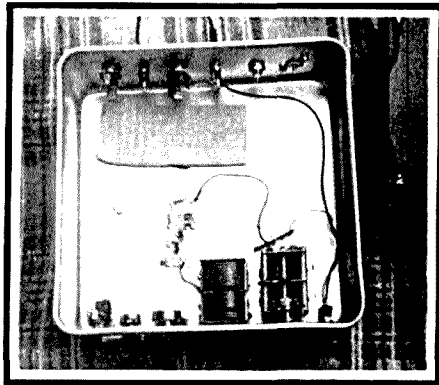
The temporary appointment was a result of the many urgent items on the committee's agenda requiring attention. Items being reviewed in the ARDF area include the possible revision of the Region 3 ARDF rules to adapt them to the special conditions in our Region and consideration of the proposal from Region 1 concerning possible revision of the world-wide ARDF rules.

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Variable Oscillators

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 Home Page: <http://www.pcug.org.au/~parkerp/>



A cake tin can serve as a useful test-bed for experimental circuits.

When I first saw the circuit by LZ1BB (Ref 1), I thought it couldn't possibly work. How could one transistor operate as two oscillators and a mixer at the one time? An hour later though, I was sold - my own version of the circuit was functioning as promised.

The circuit uses two crystals to generate a frequency that is either the sum or difference of the crystal frequencies. Unlike conventional oscillator-mixer circuits, which require at least three transistors, this circuit does it all in one! I'll leave it to the engineers in our ranks to explain how the circuit works; the purpose of this article is merely to introduce the technique to Australian readers and give a few ideas as to its use.

The prototype was built inside a 23 cm aluminium cake tin to which various variable capacitors, sockets and potentiometers had been mounted to form a useful chassis for experiments such as this. In fact, the cake tin used is the exact one that previously housed the experimental Super VXO circuit described previously (Ref 2).

Apart from the use of two crystals, the circuit itself is unremarkable. Note that because the output contains at least four frequencies, one or (preferably) two tuned circuits are needed to ensure a clean output.

Reference 1 uses the technique to generate a 3.5 MHz signal from two higher frequency crystals (in the 12-16 MHz range). The advantage of this technique is the wide VXO shift obtainable from higher frequency crystals

compared to crystals around 3.5 MHz. Because the author was sceptical as to whether the technique would work at all, he initially used crystal frequencies as close as possible to those in the prototype.

- Initial values were:
- X1: 15.810 MHz
- X2: 12.250 MHz
- L1: 4.7 μ H
- L2: 14 μ H

Note the use of the higher frequency crystal as X1. This increases the frequency shift obtainable as higher frequency crystals pull furthest in VXO circuits. Though no effort was made to optimise the value of L1, and an HC25-style crystal was used for X1, the frequency shift obtainable was a respectable 22 kHz.

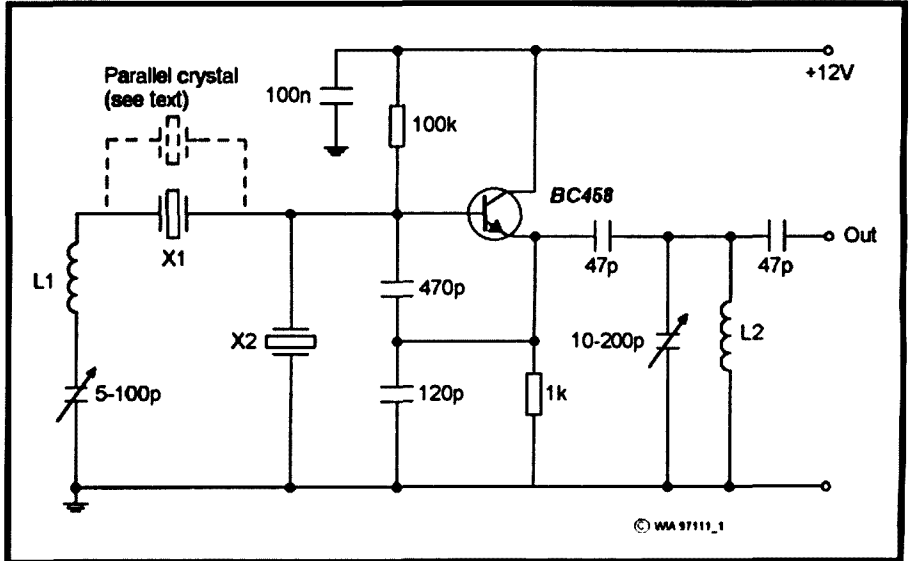
After peaking the 200 pF variable

capacitor for maximum output on 3.5 MHz, the 80 metre frequency range covered was measured. The prototype circuit covered 3.547 to 3.569 MHz, this being the difference between the fixed 12.250 MHz signal and the variable 15.810 MHz signal. The image output from the oscillator (the sum of the two crystal frequencies) turned out to be 28.039 to 28.061 MHz - allowing coverage of frequencies on two amateur bands simply by changing L2.

The next experiment was an attempt to obtain increased frequency shift by using two crystals in parallel for X1. Component values were:

- X1a, X1b: 10.240 MHz
- X2: i8.312 MHz
- L1: 23 μ H
- L2: 1 μ H

This was the most successful circuit tried, with reliable coverage from 28.480



Schematic of the one transistor frequency synthesiser (see text for L1, L2 values).

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- 28.560 MHz being achieved. Coverage below 28.480 MHz was possible, but the oscillator was sluggish in starting. 10.240 MHz crystals were used in the VXO section because most builders are likely to have some of these buried inside ex-commercial VHF equipment.

Because twin-crystal VXO circuits are known to be less stable than single crystal VXO circuits, stability measurements were done to assess whether this circuit would be acceptable for use in SSB equipment.

The oscillator was left running for a little under two hours. Drift in that period was between 100 and 200 Hz. This is an excellent result, and is probably better than many older commercially-built transceivers.

The above oscillator lends itself to use in a 10 metre direct conversion receiver or double sideband transmitter. However, care must be taken to ensure suppression of spurious outputs - 30.7 MHz (3 x 10.240 MHz) is likely to be most troublesome.

An experimental 80/40/20 metre exciter circuit, using a 3.58 MHz ceramic resonator and a 10.7 MHz crystal was tried but didn't work - while the ceramic resonator was connected there was no oscillation from the 10.7 MHz crystal.

A similar circuit using a 3.58 MHz crystal was also a failure. It appears that this technique is most reliable when the two crystals used are within about a 2:1 frequency range of one another.

Conclusion

A novel one transistor circuit for generating a range of frequencies from a pair of crystals has been described. It is anticipated that the technique will find ready acceptance on the lower HF bands (where it is difficult to obtain large swings from conventional VXOs) and for equipment on ten and twelve metres, where fundamental crystals are difficult to come by but frequency agility is still required.

References

1. Popov, H. *WS 95 80 m Transmitter, The QRP Digest #6, Saturday, 15 November, 1997*
2. Parker, P. *The Super VXO Heads South, Amateur Radio, April 1998, p31.*

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Power-line Ruling

Strong electric and magnetic fields should be classified as "possible human carcinogens", according to experts convened by the US National Institute of Environmental Health Sciences. A panel has voted 19 to 9 in favour of this rating, the lowest for a suspected cancer hazard.

The experts urged further research into the causes of higher leukaemia rates among children living near power lines, but said they could find no apparent link between the fields and other conditions such as Alzheimer's and depression.

The public will be able to comment on the panel's conclusions before Congress approves the final report.

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■ Equipment Review

Icom IC-T8A Tri-Band Handheld Transceiver

Reviewed by Paul McMahon VK3DIP
47 Park Avenue
Wattle Glen VIC 3096

What Is It?

The IC-T8A is a tri-band (6 and 2 m, and 70 cm) handheld, offering up to five watts out (at 13.5 V, actually about two watts with the Ni-MH pack provided) in what Icom claim as the world's smallest full-featured tri-band package. The review set had a serial number of 01137 and was supplied courtesy of Icom (Australia). The retail price is around \$700.

First Impressions

The first thing that can literally hit you in the eye with this set is the size of the antenna compared to the rest of the box. At some 227 mm this is over twice the height of the rest of the box at 107 mm. This can take quite a bit of getting used to and I found that, for the short time I had this set for review, wearing it on the belt was an invitation to getting the antenna caught up in all sorts of things.

In terms of the size of the base box, the IC-T8A is basically the same width, a little bit skinnier (depth), and a bit shorter (height) when compared to previous ICOM radios at 58, 28.5, and 107 mm respectively versus, say, the 57, 35, and 125 mm of the IC-2GXAT. The decrease in height is primarily gained by having the battery pack mounted on the back as in the common mobile phone case, rather than on the base as previously.

In summary then, apart from the antenna, the IC-T8A is about the same size as the majority of standard handhelds, with a number these days being quite a bit smaller. Icom's claim to its being the world's smallest full featured tri-band transceiver can only be taken as an indication of how many other tri-band handhelds there are out there, rather than an absolute indication of size. The photo shows the set in relation to a normal sized hand.

Construction

The IC-T8A is very solidly constructed with a diecast case and a statement that it meets Military Standard 810. This standard, as far as I can determine, is a US standard describing a series of tests defining everything down to and including the types and size of dust particles used in ingress tests.

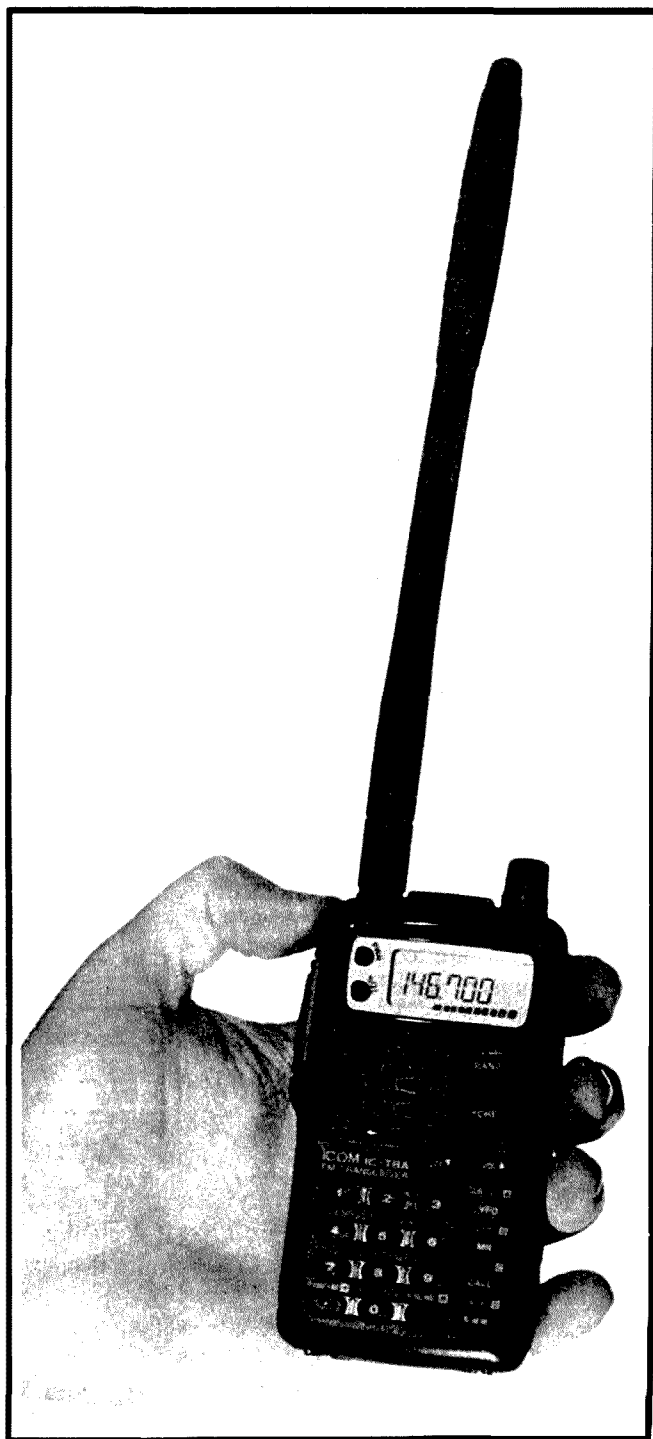
Basically, this means that the set is not waterproof, but it is pretty much sealed (when all the little rubber seals and covers are in place) and wouldn't have any problems with the occasional exposure to water, sand, and vibration, etc that it might come across in the life of an active outdoors type ham. For the rest of us it probably just means we have less to worry about if we spill coffee on it, or drop it in the dirt.

In Operation

In operation, the set is simple and straight-forward to use and produces good quality audio of quite adequate

volume for both broadcast and Ham use. I was particularly interested in its performance through the local six metre repeater (VK3RMH) where it worked well at quite reasonable distances.

The default repeater offset for six metres was not the required Australian 1 MHz, but it was relatively easily to set it to the correct local offset. This repeater (and six metre repeaters in general, as far as I can tell) tends to have quite low usage



and the advent of units like the IC-T8A should go some way towards redressing this situation.

The other thing that I noticed early on was that the image performance of the set is poor, especially in the broadcast band. Scanning the nominal broadcast range of 76-108 MHz, one could be

forgiven for thinking that there were hundreds of broadcast stations, when in fact it's just the same ones repeated a number of times.

In practice this doesn't cause great problems if all you want is to listen to FM Broadcast music. But if, for example, you wanted the set to be a general receiver

to use as an IF for a converter, or really did want to listen to something on, say, 76 MHz, all you will hear is the FM station at 102.6 MHz (roughly twice the IF frequency away).

The specifications (see sidebar) specifically exclude this second image frequency and it is easy to see why. At least by the in-built S meter, there is no difference in received signal strength between the fundamental and second image. The problem, while not quite so bad on the other bands, is still quite noticeable given signals at the appropriate points.

Technical Bits

Apart from the specifications in the sidebar, and the comments above on second image response, I had very little chance of commenting on the technical aspects of this set.

Firstly, as seems common now with the last few Icom handhelds I have reviewed, there is essentially no technical information in the 35 odd pages of the otherwise well-written manual; and secondly, I was only able to have the set for a relatively short period of time, thus limiting the chances of subjecting it to testing.

The manual does, however, explain clearly how to use all of the features of the set, much the same way as for a mobile phone, etc. I did notice, however, that there is no direct mention of what the receiver is capable of outside the amateur bands. The manual says that you will get wide-band FM for the frequencies 76-108 MHz, and AM for 118 to 136 MHz, yet the specifications as listed in the sidebar (and in the manual) would suggest that you only get the ham bands with a little bit each side.

In fact, on the radio tested, it seemed to be perfectly happy to accept frequencies anywhere from 50 to 800 MHz. Unfortunately, I did not have sufficient time to try and see what the performance was like over this entire range.

Another issue I have with the set is that there seems to be no way to change the receive mode from the default for a particular frequency. That is you can't get AM or wide-band FM anywhere other than on the dedicated bands; and conversely, if you want narrow FM in these bands, you can't get it.

IC-T8A Specifications at a Glance

General

Frequency coverage (Unit = MHz)

	6 metre	2 metre	440 MHz
USA	50 - 54	Tx: 144-148 Rx: 118-174* ¹	Tx: 440-450 Rx: 400-470* ²
Europe	50 - 52 (Rx only)	144-146	430-440
Asia	50 - 54	Tx: 144-148 Rx: 118-174* ¹	430-440
Italy	50 - 52 (Rx only)	Tx: 144-148 Rx: 136-174* ¹	Tx: 430-440 Rx: 400-470* ³

*¹ Guaranteed 144-148; *² Guaranteed 440-450; *³ Guaranteed 430-440.

- Mode: FM, WFM (Rx only), AM (118-136, Rx only)
- Acceptable power supply: 4.5 to 16 V DC (negative ground)
- Number of memory channels: 123 plus 1 call for each band
- Operating temperature range (transceiver only): -10°C to +60°C (+14°F to +140°F)
- Operating temperature range (with Ni-MH battery): 0°C to +50°C (+32°F to +122°F)
- Frequency stability: ± 5 ppm (0°C to +50°C)
- Current drain (at 13.8 V DC):
 - Tx: at 5 W: 1.4 A (typical) at 0.5 W: 0.6 A (typical)
 - Rx: -max audio: 200 mA (typical) standby: 70 mA (typical) power saved: 30 mA typical/1:8)
- Antenna connector: SMA (50 Ohms)
- Dimensions (w/BP-198/199):
 - 58 (W) x 107 (H) x 28.5 (D) mm (2.3 (W) x 4.2 (H) x 1.125 (D) in)
- Weight (with BP-199): 280 gm (9.9 oz)

Transmitter

- Output power (at 13.5 V DC): 5 W or 0.5W
- Modulation: variable reactance frequency modulation
- Maximum frequency deviation: ± 5.0 kHz
- Spurious emissions: Less than -60 dB
- External mic connector: 3-conductor, 2.5(d) mm (1/10")/ 2 k

Receiver

- Receive system: Double superheterodyne
- Intermediate frequencies (1st/2nd) MHz: 1st: 41.85 MHz, 13.35 MHz (WFM), 2nd: 450 kHz
- Sensitivity (at 12 dB SINAD): Less than 0.18 µV. Less than 1.99 µV (WFM)
- Squelch sensitivity (at threshold): Less than 0.18 µV. Less than 5.6 µV (WFM)
- Selectivity: Less than 15 kHz/-6 dB, more than 30 kHz/-60 dB (excluding WFM)
- Spurious response (except IF and 2nd image frequency):
 - 50, 144 MHz bands: -60 dB (typical)
 - 430/440 MHz bands: -50 dB (typical)
 - 50 dB for all bands at 1/2 IF image frequency
- Audio output power (at 13.8 V DC): 250 mW (typical with an 8 ohm load)
- External speaker connector: 3-conductor, 3.5(d) mm (1/8")/ 8 ohm

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COMING EVENTS

Two not-to-be-missed events to note in the diary:

Albury-Wodonga Field Day - Sunday, Aug 9

Shepparton Hamfest - Sunday, Sept 13

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L. Brown, M.A. 1995

Table 1

Battery Pack	Voltage	Capacity	Output Power	Operating Time
BP-197	4.5 V	3 x Alkaline AA	0.8 W	9.1 Hrs
BP-198	4.8 V	700 mAHr	1.2 W	3.8 Hrs
BP-199	6.0 V	700 mAHr	2.0 W	3.5 Hrs
BP-200	9.6 V	680 mAHr	4.5 W	3.8 Hrs

Note the Operating Time is for a 1:1:8 Tx:Rx:Standby ratio.

There does seem to be an exception to this mentioned in the manual for the Europe and Italian version only; however, the review set did not have this option.

Operation

As has been said, the set was simple to operate and, with the on-screen help in the menu modes, it was very easy to add memories, change offsets, and scan, etc.

Setting a frequency was simply a matter of entering it on the keypad (including the decimal point) with the repeater offset being set by using one or more presses of the "Tone/Dup" button. In a slight variation from normal practice, the secondary function of the various buttons is achieved by simply holding them down for greater than a second rather than via use of a function key.

The basic transceiver functions work well on 6 and 2 m and 70 cm, with both Tx and Rx audio at least on a par with any other handheld I have used.

As can be seen from the photo, the LCD display and keypad layout was good with no problems with viewing in sunlight, or needing tiny fingers.

The set offers the standard scanning options to scan from frequency to frequency, or through the 100 memories, and not much else in terms of value-added features. There are also some 20 other memories for call channel (per band), and scan limits, etc.

Compared to some other sets, Icom have chosen here to stick with the basics and have not added many of the frills sometimes offered.

The supplied battery pack was a Ni-MH unit which should perform quite a bit better than the more common Ni-Cd pack, and offers a much improved shelf life and greater energy density. A number of packs are available as options,

including one taking three AA cells. The capacity, etc of these, as claimed in the manual, is shown in Table 1.

Conclusion

The IC-T8A is a rugged handheld which performs the basic functions well. The extended Rx coverage and, in particular, the FM Broadcast coverage, while not quite as good as some, is still very usable and makes an attractive package, especially if you want or need a six metre portable rig.

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■ Novice Notes

An Introduction to Fox Hunting

Peter Parker VK1PK
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E-mail: parkerp@pcug.org.au
Novice Notes Online: <http://www.pcug.org.au/~parkerp/nonline.htm>

An Introduction to Foxhunting

Foxhunting, amateur radio direction finding (ARDF), or hidden transmitter hunting is a fun activity where people compete to be the first to find a hidden radio transmitter. They do this by using receivers with directional antennas to home in on the transmitted signal.

Apart from the excitement of the hunt itself, those who like making small receivers and directional antennas will enjoy it for the challenge of building equipment that is rugged, reliable and does not give false readings. Nevertheless, constructional ability is not required to enjoy the activity. Many beginners use hand-held VHF transceivers or scanners to receive signals from the 'fox' transmitter.

Regular foxhunts are held by local radio clubs or foxhunting groups. Participants may go on their own or be part of a team. Hunts are conducted either on foot or in vehicles. An amateur transmitting licence is not necessary to participate.

A variant of foxhunting is amateur radio direction finding (ARDF). This is a rapidly growing international sport and calls for a degree of physical fitness not possessed by many amateurs. Details on ARDF are presented elsewhere in this article.

Bands to Use

Most foxhunts use the two metre (144 MHz) band. The national ARDF frequency is 145.300 MHz, although some groups still use other frequencies.

There is also some ARDF activity on 3.5 MHz. Low power transmitting and receiving equipment for this band is very easy to build. Compact directional

receiving antennas for 3.5 MHz are also interesting projects. Because most amateurs already own a portable VHF scanner or transceiver, this article concentrates on foxhunting on the two metre band.

Rules

Except for ARDF, which is an international sport (see sidebar), local foxhunt groups set their own rules. These may include things like driving carefully and requiring that the transmitter be within a certain distance of the starting point. Other rules are fairly informal.

The person setting the fox goes off and hides the transmitter. Meanwhile, participants ('hounds') gather at the starting point. They may monitor a local repeater for liaison purposes. When the transmitter has been hidden, the fox setter switches it on and announces that the fox is transmitting and that the hunt has started.

Hounds first need to know which direction to travel. They madly swing their beams around until they can get a bearing on the fox's signal. They may then consult a map and start heading in the direction of the signal.

The first individual or team that finds the fox is the winner. Those who have seen the fox transmitter walk away from it to avoid giving clues to following teams. The transmitter is turned off when the last hound finds the fox or announces on the liaison frequency that they have given up. The winning station or team is then entitled to set the next fox. Either another hunt is run or participants may socialise at a participant's house or cafe.

The 'Fox'

The transmitter used in the foxhunt must be compact and rugged. Its frequency

should be stable (crystal control is ideal) and be able to run for several hours off a NiCad or sealed lead-acid battery.

RF output powers as low as 20 milliwatts are satisfactory for pedestrian-based events of a few hundred metres. Higher powers (one to five watts) are better for longer hunts. A fox transmitter with two or three RF output power settings is desirable to save power and/or fool the competitors. Fig 1 shows a typical fox transmitter.

Because many people will be using FM receivers, it is desirable that the fox's signal is frequency modulated with an audio tone. This tone can be keyed to transmit a Morse ID. Programmable ICs are often used to send the Morse. However, 20 second digital message recorders are so cheap nowadays that these are the logical choice for those wishing to build a Morse or voice ID for a transmitter.

Antennas for fox transmitters can be almost anything. A quarter wavelength piece of wire is recommended for beginners. However, more experienced groups have used fences, bridges or sheds as antennas.

The use of directional beam antennas can also be worthwhile. This is because they can fool competitors into thinking that they are very close to the hidden transmitter. Also, competitors can be given misleading bearings by orienting the beam so that it bounces the signal off a large building or hill some distance away.

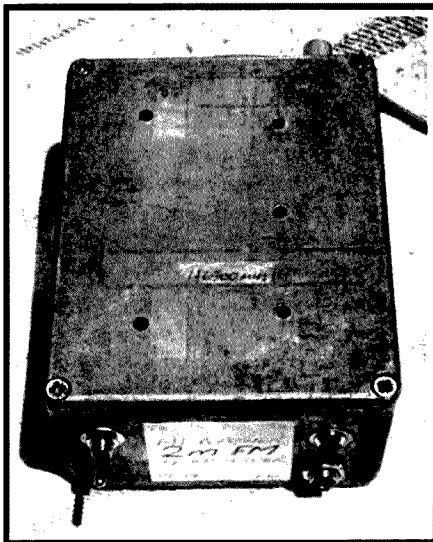


Fig 1 - A 20 milliwatt fox transmitter used for pedestrian-based hunts.

Other interesting effects can be had by experimenting with the antenna's polarisation. Effort should be made to camouflage the antenna and feedline to make finding the fox harder. For example, a tree branch and fencing wire can be made into a Yagi antenna that is almost invisible when concealed in a tree. Similarly, a wire antenna could be dunked in a lake or river.

Receiving Equipment

This is a matter for the individual competitor. The equipment used depends on whether the hunt is vehicle-based or pedestrian-based. Competitors in vehicle-based hunts typically have some sort of steerable antenna mounted on the car. Some keen hunters have bored a hole through the roof of their vehicle to allow for a rotatable pole for the antenna.

Others use an antenna on the roof rack or a vertical piece of doweling protruding through a passenger window. This last suggestion is preferred for those without beam heading indicators installed, for reasons explained later.

A two or three element quad or Yagi is the most common choice for competitors. This should be optimised for maximum front-to-back ratio rather than forward gain. A sharp null off the back or side can be very useful in direction finding. A suitable antenna was described in the February 1997 *Novice Notes* column and is pictured in Fig 2.

It is important to know the direction that the car-mounted beam is pointing. Some people use remote-control motors and indicators. However, this is not necessary for the beginner. A simple

The Sport of Amateur Radio Direction Finding

Amateur Radio Direction Finding or ARDF is a form of orienteering which was started in 1933 by the Swiss Army. Since then it has become very popular throughout the world. International competitions are held every year, mostly in Europe, and a World Championship every two years.

International competitions are held over a four to seven kilometre course. A total of five transmitters are to be found within a set time period of about 120 - 140 minutes. The competitor with the fastest recorded time is declared the winner, provided all transmitters are located.

The only assistance given is a detailed map of the area with the start and finish only marked on the map. A compass is a necessary piece of equipment. For a team event the times of the members of the team are added together and once again the lowest time would be the winner.

ARDF requires competitors to have reliable equipment, be physically fit, be able to interpret beam headings and read maps. It combines electronic, map reading and physical skills in the one activity.

All the transmitters are on the same frequency but do not transmit all the time. Instead they are switched sequentially so that only one transmitter is on air at any time. Each transmitter comes on for one minute every five minutes. Transmitters send a simple Morse code signal so that competitors can identify each one.

At each transmitter there is a punch which is used to mark a card the competitor carries to show that the transmitters have been found. Transmitters can be found in any order.

There are several categories for the competitors: Open Category; Women's Category; Junior Category (under 19 years); and Old Timer Category (over 40 years).

Every five minutes a group of competitors start, one from each of the categories above. Each category is required to find a different number of transmitters, so that following someone is not necessarily a good idea!

Two amateur bands, 3.5 MHz and 144 MHz, are commonly used. Receiving and transmitting equipment is readily available; however, the transmitters must be controlled by a licensed amateur radio operator:

Information regarding simple receiver and transmitter kits can be obtained from Ron Graham VK4BRG, PO Box 323, Sarina QLD 4737; telephone 07 4956 1155.

Abridged from material supplied by Wally Watkins VK4DO.

approach that works well is to have a nail knocked in to the side of the antenna support dowel that faces the direction to which the antenna is aimed. This method

can, of course, only be used where the antenna support dowel protrudes through the passenger window.

Inside the vehicle is a switchable RF attenuator. This is used when the signal from the fox is very strong but you still need to get a bearing. Descriptions of suitable attenuators appear in the standard handbooks. Good quality construction is important to reduce signal leakage.

Lastly, there is the receiver. This should have an S meter so that it is possible to get an indication of the strength of the received signal. SSB receive capability may also be desirable. A reasonably small multi-mode two metre transceiver (eg Yaesu FT-290R) is ideal for this application (Fig 3). Alternatively, a home-made receiver with a variable tone output to indicate received signal strength could be used instead.

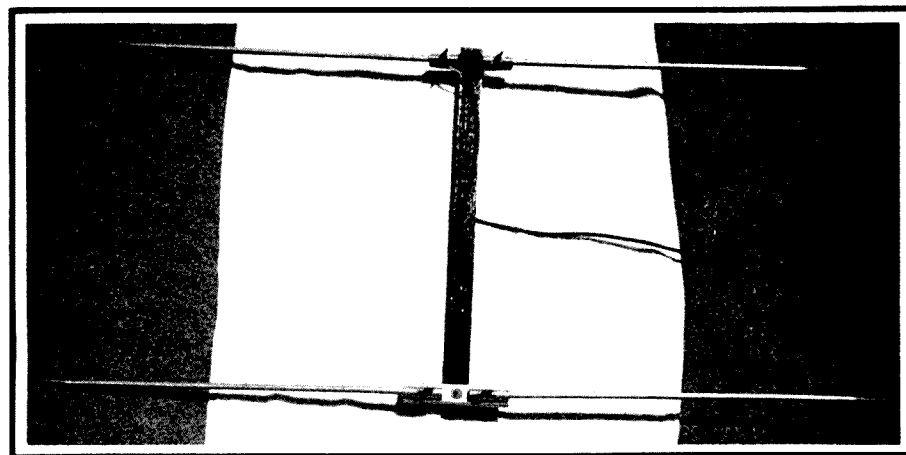


Fig 2 - A two-element Yagi used by foxhunters.



Fig 3 - The Yaesu FT-290R 144 MHz all-mode transceiver - a popular choice amongst foxhunters.

The equipment mentioned above is, of course, the ideal. However, do not be put off if all you have is an FM handheld transceiver. Foxhunts have been won by stations using these as the receiver. Tuning off frequency is sometimes a useful technique to effectively attenuate the received signal.

In many cases, vehicles cannot be parked close to the fox's hiding spot. Alternatively, signals may be so strong as to render the vehicle-mounted direction-finding system ineffective. The solution is to use a hand-held 'snoop loop'. This consists of a hand-carried two or three element Yagi, attenuator and simple receiver. This may either be a handheld transceiver, portable multi-mode transceiver, or home-made receiver. Especially important is effective shielding to prevent leakage into the receiver other than through the antenna connection.

Pedestrian hunters are limited by the size and weight of equipment that can be carried, especially if the walk will be several kilometres. A compact multi-mode transceiver or homebrew receiver, attenuator, two-element Yagi and map are all desirable for the pedestrian hunter. If the attenuator is built properly and the transceiver is well-shielded, such equipment can be used to locate the transmitter to within a metre.

Often the last hundred metres of a fox hunt can take much longer than travelling the several kilometres required to reach the general vicinity of the transmitter. This is particularly so if the transmitter, feedline and antenna are well hidden and

signals are strong. Effective triangulation of the location of the fox (including searching up and down, using horizontal and vertical polarisation and careful observation) is important here.

It is quite possible for a team to be the first to reach the general area but squander this advantage to later arrivals by having poor equipment and/or poor powers of observation. Always remember that the signal radiates from the antenna and not the fox transmitter. Thus all bearings will be towards the antenna. For this reason, the antenna is often the first part of the transmitting equipment located and you will need to follow the feedline along to find the transmitter itself.

Hiding Spots

To many, finding novel and unusual hiding spots is the best part of foxhunting. There is a peculiar pleasure in hiding a transmitter that takes other people several hours to find. If you join a foxhunting group or team, you will hear many anecdotes about past hunts where transmitters were hidden in strange places. The following are a few ideas for those whose turn it is to hide the transmitter:

Buried underground (use a fence as an antenna); under a bridge or underpass; on a peninsula, near (or in) the water; under a skateboard (preferably in use); near a sewage outflow; in a bus or train carriage (not necessarily stationary!); up a tree; in a rubbish bin; on a hill without vehicle access; shopping trolley in/near shopping centre; near a police station; close to a pager transmitter or broadcast station; inside a hollow log.

Where possible, foxhunts should be held where there are concentrations of people. Examples include main streets, shopping and restaurant areas. The reason for this is to increase the visibility of amateur radio and foxhunting in the general community. Pedestrian foxhunters are normally in a better position to answer questions from the public than those in vehicles.

Acknowledgements

I would like to thank Wally Watkins VK4DO, Ron Graham VK4BRG and Neil Pickford VK1KNP for their assistance in the preparation of this article.



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Technical

Technical Abstracts

Gil Sones VK3AU
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ALIVO Fun Transceiver.

A simple 80 metre transceiver was described in the April 1998 issue of *Break In* by Fred Johnston ZL2AMJ. The design is simple to build and will provide 2-3 watts output.

Three integrated circuits and one field effect transistor are used in a simple circuit which can provide good performance. A ceramic resonator is used and tuning is possible over the range 3.53 to 3.58 MHz.

The block diagram is given in Fig 1. This is a direct conversion receiver design using the NE602 integrated circuit. The

circuit diagram is given in Fig 2. Netting is provided so that CW operation is simple. The net switch is held when tuning for zero beat and then the audio note can be set to your preference with the RIT.

The ceramic resonator appears to be similar to the ones

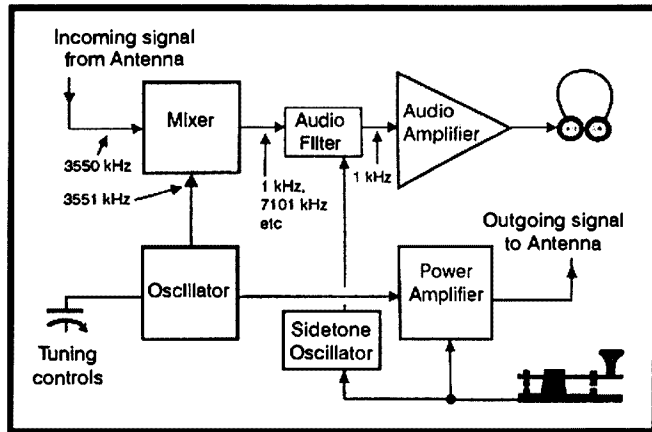


Fig 1 - Block diagram of the ALIVO transceiver.

The only inductor to be wound is L1/L2 and this uses a 6 mm slug tuned former. L2 is 40 turns of 26 SWG (0.018") enamelled copper wire. L1 is six turns of the same wire wound over the earthy end of L2. The other inductors are the small moulded RF Chokes available from most parts retailers.

The output FET should be fitted with a small heat-sink. The transceiver runs off batteries. A six volt battery runs most of the circuitry and, on transmit, a nine volt battery is placed in series to provide a 15 volt supply to the output FET amplifier.

In the May 1998 edition of *Break In*, Fred Johnson ZL2AMJ described how to run the transceiver from a 12 volt DC source. Either a plug pack or a vehicle supply could be used. The circuit is given in Fig 3. A five volt regulator and a LED are used to provide the six volt supply, and the 12 volt supply is used for the 15 volt rail.

Video Low Pass Filter

A video low pass filter design appeared in the May 1998 issue of *CQ-TV* which was intended to limit the bandwidth of the video signal from computer generated video sources and electronic test card generators.

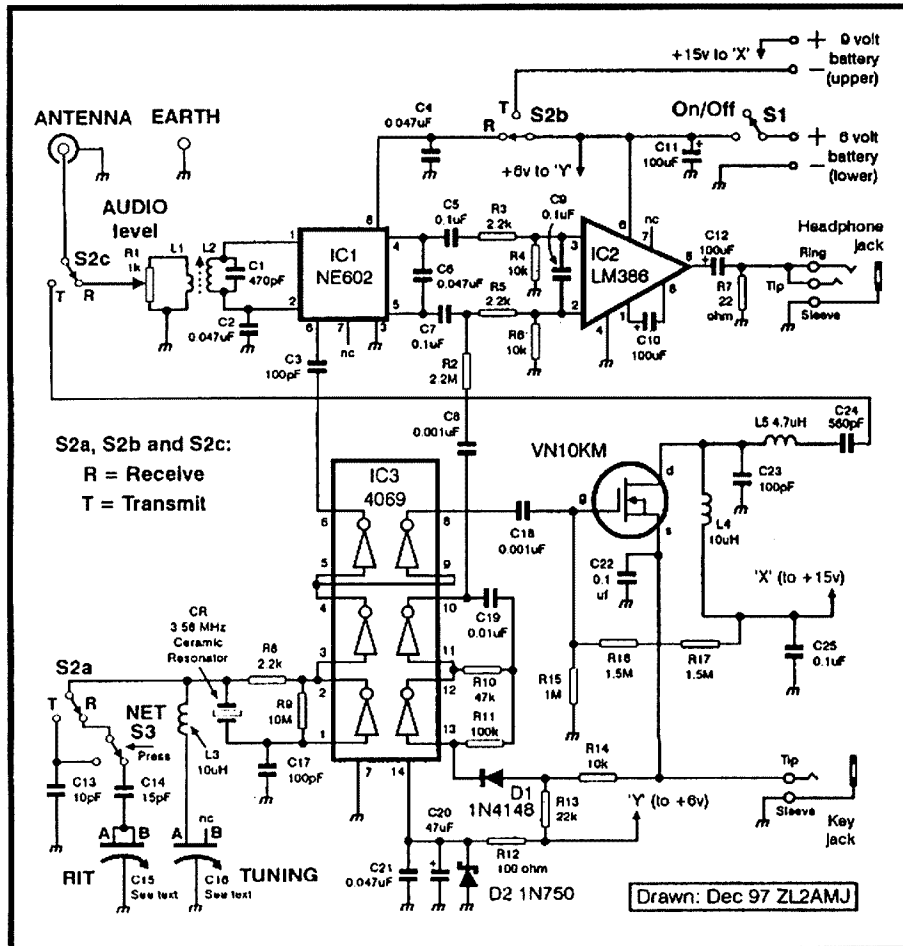


Fig 2 - Circuit diagram of the ALIVO transceiver.

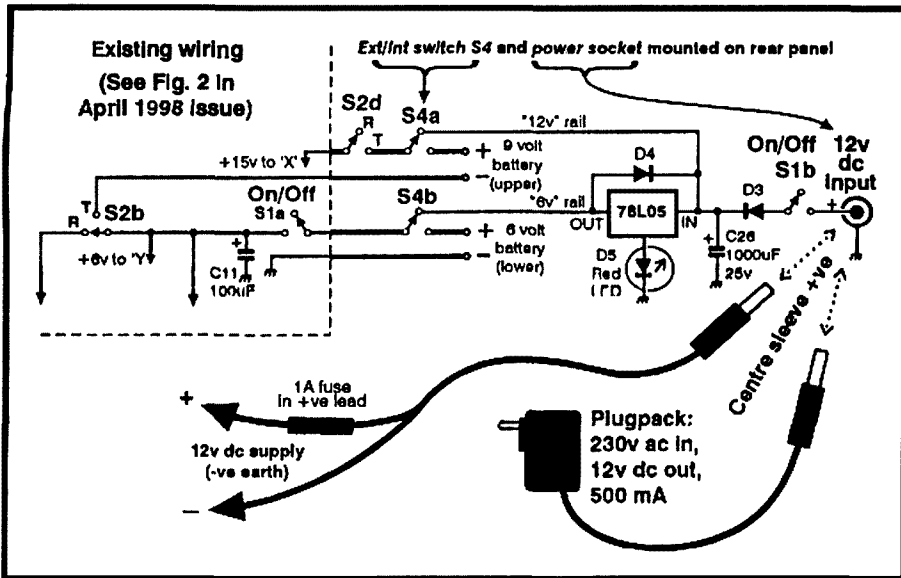


Fig 3 - External power for the ALVO transceiver.

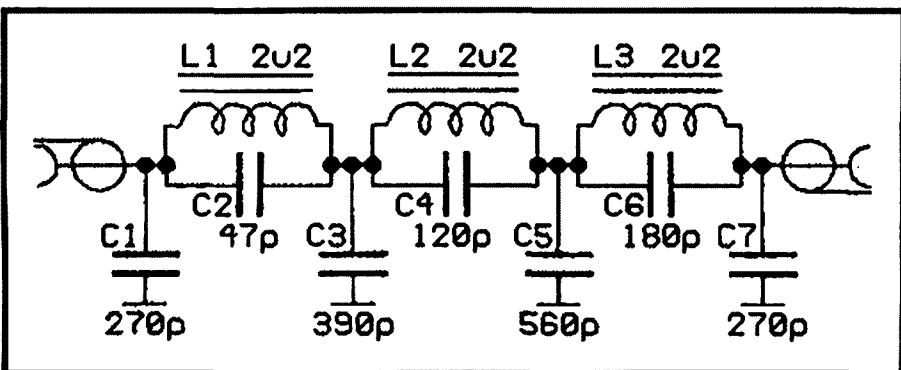


Fig 4 - Circuit diagram of the video low pass filter.

These sources of video may have a much greater bandwidth than the usual video sources due to the presence of steep pulse edges. This filter limits the video bandwidth. The design was the work of Martin Fruchte DF9CR. The filter was small enough to fit into a housing fashioned from BNC plugs and sockets.

The circuit of the filter is shown in Fig 4, the PCB pattern and overlay in Fig 5,

5. The filter is made small by the use of surface mount components. The PCB is shown for information as the filter can be made from more usual components.

Frequency response of the filter is shown in Fig 6. The 3 dB point is just below 6 MHz and the 50 dB point is at 8.8 MHz. The filter was 0.89 dB down

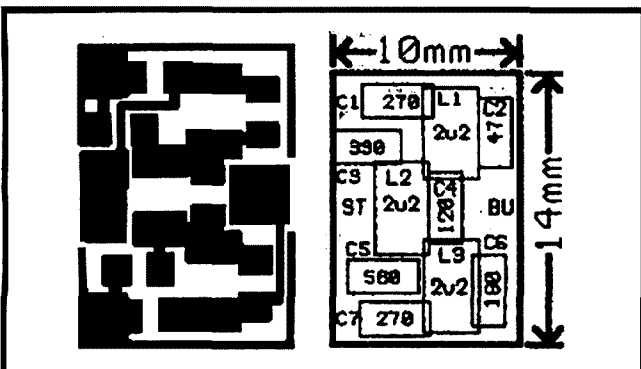


Fig 5 - PCB pattern and component overlay (much enlarged).

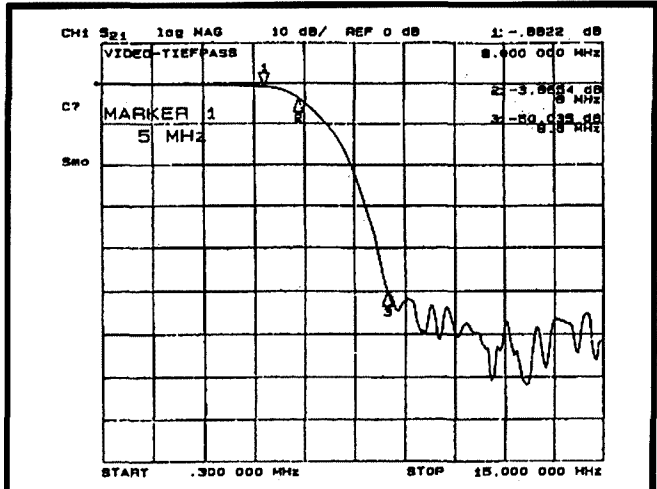


Fig 6 - Frequency response of the video low pass filter.

at 5 MHz. This is quite good performance.

DTMF Tone Frequencies
 The *New Ham Companion* column in *QST* for January 1998 presented useful information concerning the DTMF tones used. These tones are used by the telephone system for dialling. The article showed the 16 button pad which is sometimes used to provide extra functions. These pads are often included on transceivers.

The tones were originally picked to avoid harmonics and confusing beats. When each button is pressed, two tones are produced. They are equal in level. Nowadays ICs generate the tones and they have been pressed into service as two tone test signals as well as their more conventional role of signalling.

The 16 button pad with the row and column tone frequencies is shown in Fig 7. The 12 button pad just uses the first three columns of the 16 button pad.

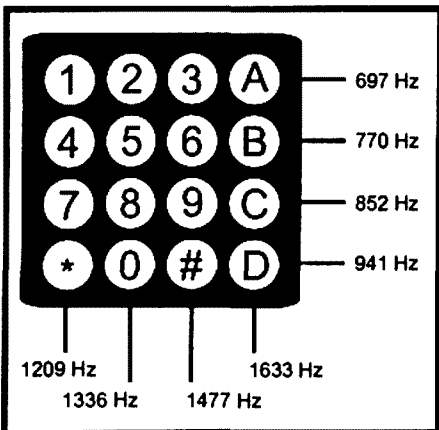


Fig 7 - 16 Button DTMF tone pad.

■ Repeater Link

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Some readers of *Repeater Link* may believe that I live and breath voice repeaters. This may have been true many years ago, but now computers occupy far more of my hobby and work time than amateur radio. The past couple of months have been consumed with sorting out computer problems and my experiences may provide some light entertainment for all amateurs, be they experts in computers, average users of computers, or even those of you who have nothing to do with computers.

I will bias this article towards the average user and the non user. The expert would not have had all the problems I have had and probably could have resolved the situation in an hour or less.

Introduction

Firstly, for all amateurs who have never used a computer and have no idea what computers are used for, an introduction. Way back I had no idea what people used computers for. I knew games could be played on them, but what serious things could be done on them?

Asking those that used computers, "What do you do on them?" elicited the stock answer, "Anything you want to, it is only limited by your imagination." This response did little for me, so I asked the next question, "So what do you do on them?" The answer came back, "All sorts of things." So it went on, with no real answers. I came to believe that little was done and most computer users just fiddled and pretended to be doing something worthwhile.

Now I can answer this question for myself. The list is a fairly long one.

Computer Uses

For a start, I'm writing this article on a computer. My early *Repeater Link* articles

were hammered out on a typewriter. What a hard way to do it! Any mistakes, or changes of mind, resulted in having to re-type the whole page or article. A computer frees you of all this.

Mistakes, changes of mind, etc are easy and fun to make on a computer. And, most important for me, is the spell checker. I fall into the very poor spelling class. The computer corrects most of my spelling mistakes, and the *Amateur Radio* editors tidy up the few the computer misses.

I tried the grammar checker but it only confused me so you are stuck with my grammar as corrected by the editors. It is a joy to write on a computer and the typewriter is no longer used at all.

Once the article has been completed on the computer I can then e-mail the article to *Amateur Radio*. The process is fast and easy. The *Amateur Radio* Production Manager then edits the article on his computer and e-mails me any comments.

My second use of a computer is for Computer Aided Drawing, called CAD. This is similar in experience to writing on a computer. Once you have mastered the drawing program it is as fast as using a pencil and ruler but with so many added advantages. The finished drawing looks perfect with all lines dead straight and at right angles. Any errors are easily changed and latter modifications edited into existing drawings. Also the CAD files can be sent electronically by e-mail.

The third use I put computers to is the Internet. A vast electronic library that contains information and computer software, along with e-mail, global chat, games, shopping - the list goes on. I often look up pin-outs of integrated circuits I can't find in my technical reference books.

I mentioned games on the Internet. The quality, sophistication and complexity of computer games on the Internet has to be seen to be fully appreciated. High quality graphics in real-time are transferred between players anywhere in the world. Special interface software has been written to allow you, via a central server, to select from a list of players waiting for a game. You chat to them via the keyboard before playing a game. Some of these games are intense, to say the least. Yes, I admit to playing a few and up to four, yes four, hours can go by on one real-time strategy game like Red Alert.

The game is so fast and furious that the cup of coffee you brought in at the start remains untouched and cold at the end of the game. There is not time to even sip at the coffee!

It is interesting to understand how high quality graphics, that are changing as fast as you can click the mouse, can be sent over the phone line to someone on the other side of the world. The answer is the graphic is not being sent. Only a text code, to say move that object from there to there, is sent. Only a few letters are needed to move an individual graphic like a tank.

There can be hundreds of objects all moving in all sorts of directions, all in high quality graphics, but just a handful of lines of text are sent across the Internet. Very clever and it works very well. If you wondered where all the young would-be-amateurs are, a good number are playing these games on the Internet until they drop!

My fourth use of computers is to put together the VK6 WIA home page. This is largely what the Internet is made up of. Anybody who is on the Internet can publish to the world whatever they want. This is something new and very big in the world of mass communications between people, that cannot easily be controlled by Governments.

Use number five is photographic scanning and restoration. Once a photograph is scanned into a computer there is almost nothing that can't be done to enhance, restore or change the image. The resulting photograph can be far better than the original.

I have restored several old black and white photographs dating back 80 years or more for friends and relatives. The printed results are truly amazing. My mother has many old Box Brownie match

box size photographs that are just too small to appreciate fully. Once digitally enhanced and laser printed to A4 size, they show detail that could not be seen in the original, and take on a charm largely missed in the small original.

Use number six is similar to number five, but involves using a digital camera to take photographs and use the computer to enhance and modify the result. Also, single snapshots of video camera images can be captured and manipulated to produce quality still images. I have often taken low-light video frames, manipulated them to remove noise and other limitations in the image, and produced a photograph that you would not have believed came from the original video.

Use number seven is Packet Radio, the biggest mass change to the hobby of amateur radio since the introduction of voice repeaters. As a simple and easy means to keep in touch with fellow amateur radio operators, packet radio is close to perfect.

So there is my list, so far, of uses for a computer. There are many others "only

limited by your imagination". Had to slip that one in.

Due to space limitations, part two of "Computers, Ugh" will conclude next month in *Amateur Radio*.

ar

WIA New Members

The WIA bids a warm welcome to the following new members who were recently entered into the WIA Membership Register:

L21071	MR R E GOMEZ ARBALLO
L21072	MR M G DAWSON
L60396	MR S FARRANT
L70151	MR G PFEIFER
L70152	MR K D BURGESS
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VK2IEV	MR G BIVONA
VK2TG	MR R DEMKIN
VK2TNF	MR B E DUNMORE
VK3DVC	MRS R CRACHI
VK3DVD	MR F W CRACHI
VK3JNJ	MR M STANTON
VK3PRA	MR R ACEVEDO
VK3PV	MR B HEGGIE
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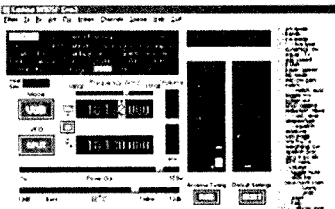
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Here's an action-packed issue by any description! We join well-known DXer Martti Laine, OH2BH, as he activates a 'new country' in the Solomon Islands, charge down river rapids while working two and ten metres; pay a flying visit to Mongolia, check out the fascinating Kachina 505DSP computer-aided HF rig, and lots, lots more!

August's R&C is a veritable feast for amateurs and radio junkies, just bulging with news and great stories.

- H4ØAIA: profile of a DXpedition. A new country very close to Australia. What more could you ask?
- REVIEW: Kachina 505DSP. New to Australia, this rig offers remarkable performance. But is it for you?
- THE CONSTRUCTION ZONE: Low-ohms measures. Here's a simple, low-cost way to get accurate readings
- REVIEW: MFJ-224 analyser. A smart two metre FM deviation checker which doubles as a sniffer receiver.
- AMATEUR RADIO IN MONGOLIA: You don't hear too much JT activity... but believe me, they're there!!
- As usual, we have our three DX columns, mods and more... the best stories and regulars every month!

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vk3co

to refer to the *ARRL Antenna Handbook*, another is to use a computer program.

Antenna 1.8 m Above Ground

I used *NEC-Win Basic*, an antenna modelling program from Paragon Technology Inc. As shown in the diagrams, the elevation pattern is quite useful. Refer to Fig 1, which shows the radiation pattern over perfect ground of an 80 m dipole 1.8 m above the ground plane, viewed end on to the wire. Note that the diagram shows 0 degrees as being vertically overhead instead of the more familiar 0 degrees for the horizon.

What does it mean? Well, signals emitted at around 30 degrees above the horizon can be expected to reach out over 1,000 km. Pretty useful for a temporary installation.

The low dipole is about 6 dB down at 30 degrees elevation and below that it becomes increasingly less effective. It is about 12 dB down at 10 degrees and below five degrees the signal diminishes rapidly.

Antenna 13 m Above Ground and Higher

Fig 2 shows the same pattern when the dipole is raised to 13 m. Note that there is very little difference for angles above 10 degrees. After increasing the height again to 30 m, the pattern starts to show

Random Radiators

How Low Can You Go?

Ron Cook VK3AFW and Ron Fisher VK3OM
C/o 3 Tamar Court, Mentone VIC 3194

Missing

Up until last month, this column had not made its scheduled appearance in *Amateur Radio* recently. Why?

When we started the column some years back, it was intended that we should not, by ourselves, write the column. That is, the appearance of the column was to be largely dependent on input from you, the reader. Indeed, this is true of most columns; it is the feedback and input from the readers that determine if the column proceeds and in which direction it goes.

Ron and I welcome any sort of material on antennas, whether it is in the form of questions, personal experiences, or interesting articles sighted elsewhere. Don't worry if it is scrappy or only part complete. We will polish it up and fill in the gaps. Remember, no letters, no regular column.

How Low Can You Go With an Antenna?

I was talking to Scotty VK2KE at the last Bendigo Hamfest. We got to talking about antennas and he mentioned some experiments he conducted some time back.

Faced with being unable to erect a mast or two, Scotty made up a dipole for 80 m and ran it along a wooden boundary fence. He was very pleasantly surprised at how well it worked.

No, it wasn't a world beater for DX; however, it got him onto the band and gave some excellent contacts around VK3 and interstate.

A low dipole radiates very well straight up. It actually has some gain in that direction! It also radiates a lot of energy down to around 30 degrees elevation. One way of seeing the effect of height is

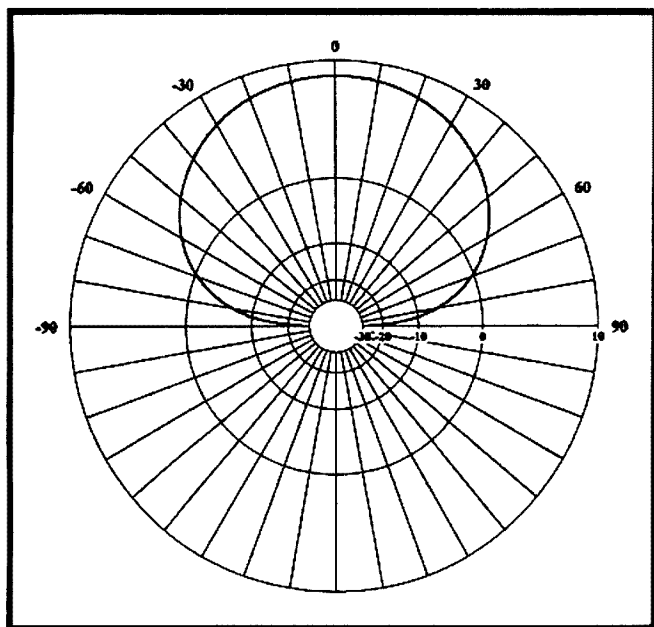


Fig 1 - Dipole, 39.6 m long, 1.8 m high, at 3.6 MHz.

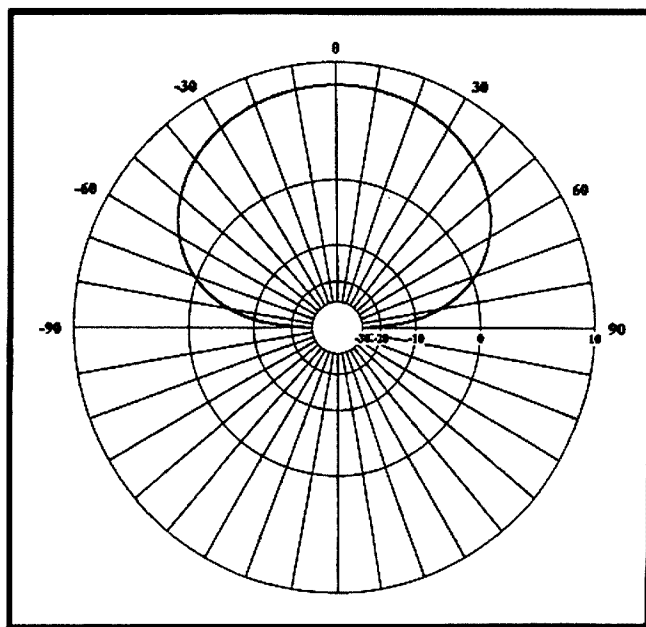


Fig 2 - Dipole, 39.6 m long, 13 m high, at 3.6 MHz.

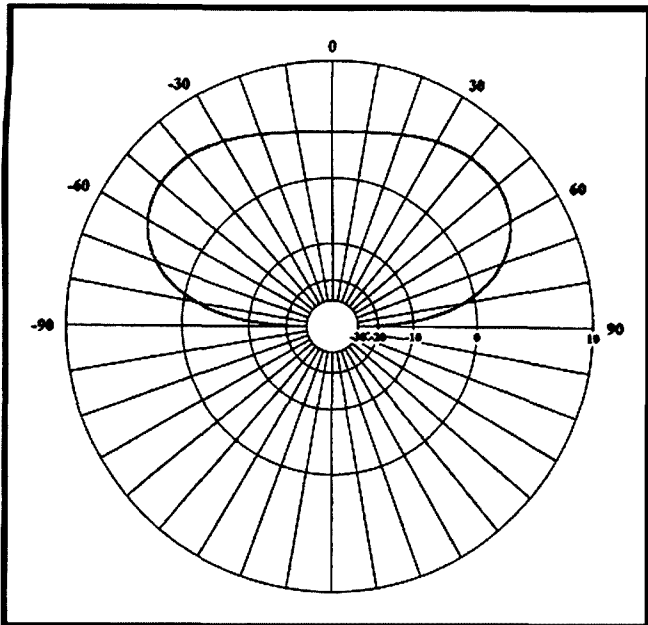


Fig 3 - Dipole, 39.6 m long, 30 m high, at 3.6 MHz.

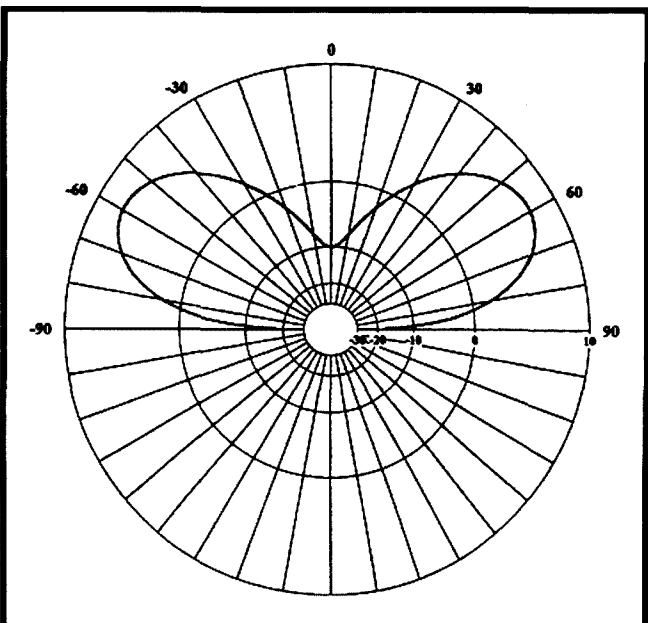


Fig 4 - Dipole, 39.6 m long, 40 m high, at 3.6 MHz.

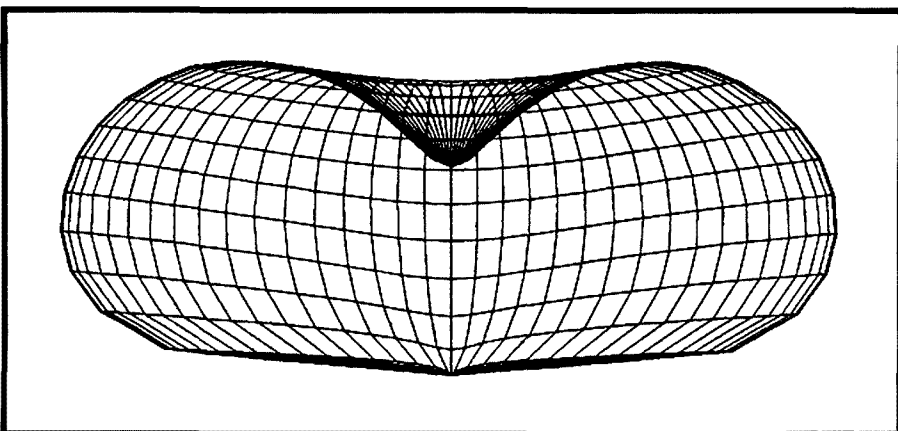


Fig 5 - Dipole, 39.6 m long, 40 m high, end view.

significant improvement for DX operation (see Fig 3). It is about 3 dB better below 30 degrees and more than that below five degrees.

At 50 m significant directivity is apparent with signals up to 10 dB better at angles of 10 degrees or less. The vertical component is up to 18 dB down.

Fig 5 shows the same pattern as Fig 4, but in a different format. It is an attempt to show a 3D view of the pattern, as Fig 4 is only a slice of the total pattern.

So, does this mean that unless you can get the antenna up 30 m or more above the ground, on 80 m you might as well run the dipole along the back fence?

Well, yes and no!

If you were out on a flat plain with high ground conductivity and there were no buildings or metal objects about, then the answer is yes. However, in

most environments, placing the antenna at 1.8 m will result in much of the signal being absorbed by ground losses and by nearby structures, to say nothing about the increased possibility of TVI. So, for most of us the answer is no.

Incidentally, the same conclusions apply for higher frequencies provided scaling is applied. To get the same pattern as for a 3.6 MHz dipole at a height of 30 m, we would need to place a 7.2 MHz dipole at 15 m and so on. Raising the 7.2 MHz dipole to 30 m gives a pattern similar to a 3.6 MHz dipole at 60 m.

Finally, a couple of rules of thumb. With antennas, the higher the better is the first rule. The second rule is, of course, the bigger the better (if it didn't blow down in the last storm, it wasn't big enough!).

Well, that's all for this time. So, it's 73 from both of us, and don't forget to write!

The two Rons.

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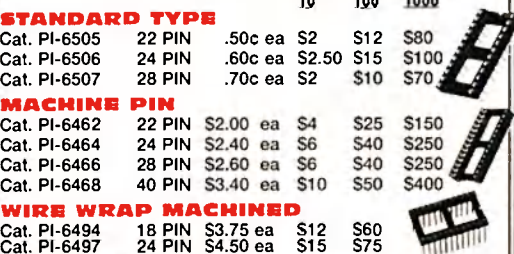
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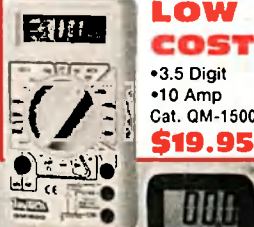
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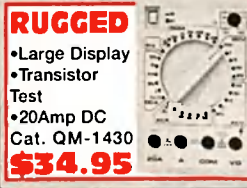
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Great Circle Distance and Bearings Program

Richard Atkinson VK4ZA
57 Sirocco Street
Jamboree Heights QLD 4074

Introduction

The propagation of radio waves via the ionosphere is along a great circle route, a great circle being any circular path on the earth's surface that is centred at the earth's centre. These routes specify two paths between the stations, being the short and long paths. Usually the difference between them is obvious but, when the two stations tend to be antipodean, the difference between the two paths declines.

The main problem for amateurs is to know the direction (bearing or azimuth) to point an antenna for maximum radiation along the chosen great circle route. It also helps to know the distance. The diagram (Fig 1) is a simplified picture of the world. The parallels of latitude and meridians of longitude are shown along with the two paths. It is the most common basis for exchange of position on the globe. Great

circle calculations are usually done from these parameters. To find the azimuth and distances involves a branch of mathematics known as spherical trigonometry.

Thankfully, the home computer can be programmed, in Basic, to handle all the calculations. An initial attempt like that in the listing on the next page will do the calculation. It is a short program listing so can be easily transcribed. It also gives an idea of the calculations involved.

The parameters are descriptive; GCA is great circle angle. It is modified from a program published by the Ionospheric Prediction Service. You are welcome to use it, but beware, it does have shortcomings. No checking of data is done, so unreasonable data could give false results. Latitudes need to be in the range of +/-90 degrees; similarly longitudes need to be within +/- 180 degrees. Inadvertent errors

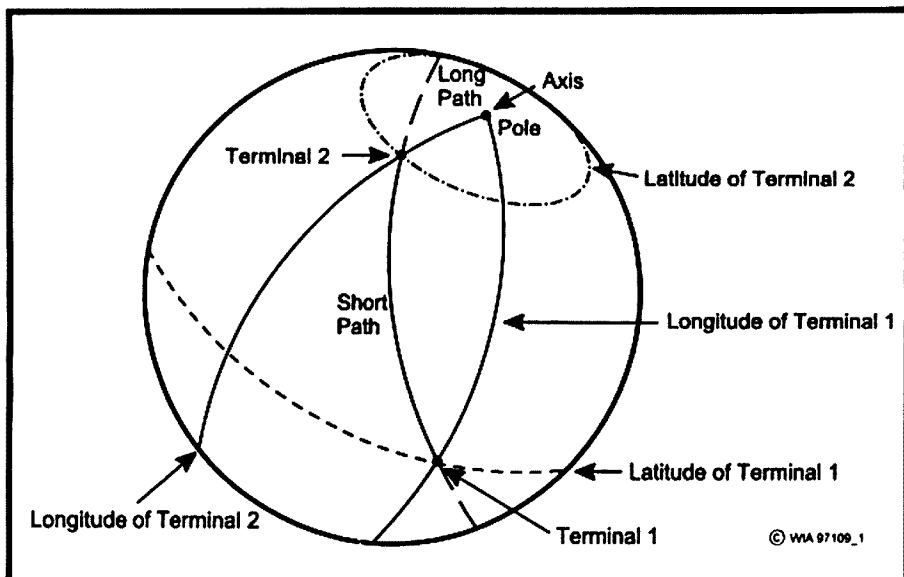


Fig 1 - Distance is the length along the path. Azimuth is the angle between the meridian of longitude and the path. By convention, the angle is from the north clockwise to the path.

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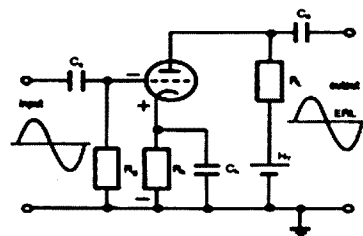
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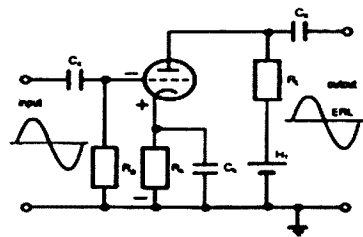
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are not picked up. For example, if the two stations are on opposite sides of the world (antipodean), or one, maybe both, stations are located at the poles, then the program may terminate with a divide-by-zero error.

Bearings from the poles are difficult to interpret as all directions are north or south toward the other pole. If results are obtained they should be regarded as suspicious, particularly the bearings. It also assumes that the earth is a perfect sphere when it is in fact slightly oblate: it resembles a pear.

A more sophisticated program, that overcomes these problems, has been written. It also provides more facilities via a menu to make it more useful. The program was developed using QBASIC and operates under DOS; a compiled version is also provided. It can operate on user provided positions and builds up a data base of destinations to augment the existing one. User provided destinations can be added to the file. The data base is a separate file so it can be edited. The originating site is set for ease but can be adjusted by selection from the menu. It also uses double precision mathematics when menu selected to provide greater accuracy. Some data editing options complete the menu selections.

The listing has not been printed due to space and transcription problems but is available from Richard VK4ZA. If you forward a 5.25 or 3.5 inch floppy disk in a disk mailer to Richard, together with your return address on a piece of paper and stamps to the value of 95 cents, he will send you a copy of his programs.

Evan Jarman VK3ANI
Technical Editor

Great Circle Distance and Bearing Program

This program is in QBASIC. It was written by Richard Atkinson VK4ZA. Acknowledgement is given to information from previous articles in *Amateur Radio* and the *ARRL Antenna Handbook*.

The purpose of DISTBRG.BAS is to calculate distances and bearings on a spherical earth to any place from origin, knowing the latitude and longitude co-ordinates of these places. Bearings will be calculated to places within a degree. Automation can be used for the calculations. Here, the input data on a series of distant places comes from a file. The

results are placed in a text file and this can be put into a word processor.

Calculations can also be done on a piecemeal basis with facilities for putting the input data and results into ASCII text files. You can choose the names of these files. The source file of distant places and co-ordinates should be built up in this way. This program will sort the output file so places appear in alphabetical order. You build up an input file of your favourite distant locations. If you change your own location, change the origin co-ordinates on menu, delete the old results file, and recalculate.

Starting the Program

Assuming "Qbasic.exe" is in your DOS directory, start it with the command: QBASIC DISTBRG.QBS. With DISTBRG.EXE, just execute DISTBRG from floppy or hard disk.

Data Files

If this program hasn't been used before, it sets up a file called "DISTBRG.INT". This holds the default information such as filenames used and origin information. Dummy origin information is put into this initially. It also causes the file "dislocs.dat" to be the input data source and

"brcalcs.dat" to be the output results, and stay that way if you desire. All this information may be changed with option 6 on the main menu.

Method of Entering Latitude and Longitude

North and south latitude are entered as positive and negative. East or west longitudes are entered as negative or positive respectively. In main menu choice 1, they are in degrees, minutes and seconds separated by commas, eg -40,25,30 is 40 degrees 25 minutes, 30 seconds south, while -130,45,30 is 130 degrees, 45 minutes, 30 seconds east.

Near the equator or Greenwich meridian, it can be 0,0,-25 for latitude or longitude, say. The seconds must be entered even if it is a zero. A minus sign for either degrees, minutes or seconds will set the whole co-ordinate south or west.

Miles, Kilometres or Nautical Miles

The program was made to output one of these units into the results file to allow the information to fit in one line. If the need is for any of the other, it can be changed on the menu. A recalculation will have to be made to generate a new results file.

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Listing - Great Circle Distance and Bearings Program

```
DIM path$(2), LON(2), LAT(2): pi = 3.14159: dr = pi / 180: Re = 6370
path$(1) = "SHORT": path$(2) = "LONG": CLS
PRINT ">Great Circle Bearings and Distances<"
FOR I = 1 TO 2
  PRINT : PRINT "Terminal #"; I; " "; : INPUT "Name"; NAM$
  INPUT "  Latitude/deg(N+,S-)"; LAT(I)
  INPUT "  Longitude/deg(E+,W-)"; LON(I)
  NEXT I: PRINT
FOR ISITE = 1 TO 2
  PRINT "From terminal #"; ISITE; "-"; : DL = LON(2) - LON(1)
  CA = COS(LAT(1) * dr) * COS(LAT(2) * dr) * COS(DL * dr)
  CA = CA + SIN(LAT(1) * dr) * SIN(LAT(2) * dr)
  GCA = ATN(SQR(1 - CA * CA) / CA): IF GCA <= 0 THEN GCA = GCA + pi
  CAZ = COS((90 - LAT(2)) * dr) - COS(GCA) * COS((90 - LAT(1)) * dr)
  CAZ = CAZ / SIN(GCA) / SIN((90 - LAT(1)) * dr): dist& = Re * GCA
  AZ = ATN(SQR(1 - CAZ * CAZ) / CAZ): IF AZ < 0 THEN AZ = pi + AZ
  IF SIN(DL) < 0 THEN AZ = 2 * pi - AZ
  FOR path = 1 TO 2
    LOCATE , 17: PRINT path$(path); "path:";
    LOCATE , 29: PRINT "Bearing is"; CINT(AZ / dr); "degrees"
    PRINT , , "Distance is"; dist&; " km"
    AZ = AZ + pi: IF AZ > 2 * pi THEN AZ = AZ - 2 * pi
    dist& = 40036 - dist&: PRINT
  NEXT path
  SWAP LAT(1), LON(2): SWAP LON(1), LON(2)
NEXT ISITE
END
```

Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaca Street, Mentone VIC 3194
E-mail: vk3did@hotmail.com

Contesting can be demanding, but good fun once you get going. Regular entrants know this, but it is very easy to forget simple things in the heat of the event.

Recently I worked and monitored the VK Novice Contest. I was much saddened to hear a nasty exchange of foul language between a Novice and a Full Call. I could hear how it happened, and it was not good for the spirits of either operator, nor for the image of amateur radio in Australia. Please remember the rule of listening first before transmitting on any frequency, contest or not!

This will save unpleasantness, even if you feel that you are wasting time by not calling.

I had an interesting letter from David VK2AYD about the All Asia CW DX Contest. David wrote: "As you know, the report sent includes your age. From the 255 QSOs (90% of which were Japanese), analysis showed: under 20, less than 1%; 20 - 30, 4.3%; 30 - 40, 21.3%; 40 - 50, 33.6%; 50 - 60, 19%; 60 - 70, 3.2%. Average age was 48!"

Thanks for the statistics, David. Very interesting indeed and not information readily available. See you in the RD contest!

Thanks this month to VK3APN, VK2-AYD, JE1CKA, OH1HS and the RSGB.
73 de Ian VK3DID

Bulgarian DX Contest

6 September, 0000-2400z Sun

This contest runs on the first Sunday of September each year on 80 - 10 m, CW only. Exchange RST plus ITU zone (P2 = 51, VK4/8 = 55, VK6 - 58, VK1/2/3/5/7 = 59).

Score six points for each QSO with an LZ, three points for each QSO outside your WAC continent with a non-LZ, and one point for each QSO within your WAC continent. SWLs score three points if both exchange numbers are copied, and one point if only one exchange number is copied. Multiplier equals the total ITU zones worked on each band.

The final score equals the total QSO points (all bands) times the total multiplier (all bands). Send logs postmarked within 30 days

Contest Calendar August - October 1998

Aug 1	Waitakere 80 m Sprint (CW)	(Jun 98)
Aug 1/2	YO DX Contest	
Aug 8/9	Worked All Europe (CW)	(Jul 98)
Aug 15/16	Remembrance Day Contest	(Jul 98)
Aug 15/16	Keyman's Club of Japan (CW)	(Jul 98)
Sep 5/6	All Asia DX Contest (Phone)	(May 98)
Sep 6	Bulgarian DX Contest	
Sep 6	Panama SSB Contest	
Sep 12/13	Worked All Europe (Phone)	(Jul 98)
Sep 19/20	SAC DX (CW)	
Sep 26/27	SAC DX (Phone)	
Sep 26/27	CQ WW RTTY DX Contest	
Oct 3/4	VK/ZL/Oceania DX Contest (Phone)	
Oct 4	RSGB 21/28 MHz Contest (Phone)	
Oct 10/11	VK/ZL/Oceania DX Contest (CW)	
Oct 17	Asia-Pacific Sprint (CW)	(Jan 98)
Oct 17/18	Worked All Germany (Mixed)	
Oct 18	RSGB 21/28 MHz Contest (CW)	
Oct 24/25	CQ WW DX Contest (Phone)	

(1 Oct) to: Central Radio Club, Box 830, 1000 Sofia, Bulgaria.

Panama Anniversary Contest (SSB)

6 September, 0001 - 2359z Sunday

The Panama Radio Club invites all radio amateurs to participate in their 26th annual contest. The only category is single operator, SSB, 40/20/15 m. Exchange RS plus serial number. Score two points for QSOs with HP stations and one for others. The multiplier is the total DXCC countries worked on all bands.

Certificates of participation will be sent to all amateurs working 10 or more HP stations, upon receipt of three IRCs, and a plaque to the highest scoring station in each continent. Send log postmarked by 28 November to: Radio Club Panama Contest, Box 10745, Panama 4, Panama, or via packet to HP1BYS@HP1CDW.PANCTY.PAN.CEAM, or via e-mail to hlewis@suprempty.com.

Scandinavian Activity Contest

19/20 September (CW), 26/27 September (Phone), 1500 Sat - 1800z Sun

The CW and Phone sections of this contest run on the third and fourth full weekends respectively of September each year. The object is for amateurs world-wide to contact as many stations in Scandinavia as possible, on 80 - 10 m (no WARC bands). Scandinavian prefixes are: LA/LB/LG/LJ (Norway); JW/JX; OF/OG/OH/OI (Finland); OF0/OG0/OH0 (Aland Isl); OJ0 (Market Reef); OX/OY;

OZ/SP (Denmark); SI/SJ/SK/SL/SM/7S/8S (SWEDEN); TF.

Categories (all band only) are: single operator, single operator QRP (max 5 W o/p); multi-operator single transmitter; SWL. Exchange RS(T) plus serial number starting at 001. For each QSO, score one point on 20, 15 and 10 m, and three points on 40 and 80 m. The multiplier is the number of call areas (0 - 9), not prefixes, for each Scandinavian country worked on each band. Portable stations without a district number count as area 0, eg G3XYZ/LA counts as LA0. OH0 and OJ0 are separate call areas. The final score is total QSO points (all bands) times total multiplier (all bands).

Use standard format for logs and summary sheets. Show duplicate QSOs with 0 points. Dupe sheets are required for 200+ QSOs. Forward separate logs for CW and phone sections. Logs on 3.5" DOS disk are welcome and must be in ASCII, one QSO per row, and labelled with the call, contest name, section/s and contest date. Include an SASE if you want your disk returned. Summary sheet must be on paper.

The mailing address alternates between SSA (Sweden), NRRL (Norway), EDR (Denmark) and SRAL (Finland) in that order. For 1998, send your log postmarked by 30 October to: Joergen Roemming OZ1JSH, Gammelgards Alle 1 st tv, DK-2665 Vallensbaek Strand, Denmark.

CQ WW RTTY DX Contest

26/27 September, 0000z Sat - 2400z Sun

In this contest, the object is to contact as many stations world-wide as possible using digital

modes (Baudot, ASCII, AMTOR (FEC and ARC) and packet) on 80-10 m (no unattended operation or operation through gateways or digipeaters), etc. Stations may operate for the full 48 hours.

Categories are: single operator unassisted, single and multi-band; single operator assisted, all band; multi-operator single Tx, all band ("10 minute" rule applies to this category EXCEPT that one - and only one - other band may be used during the 10 minute period if - and only if - the station worked is a new multiplier); multi-operator multi-Tx, all band. Single operator entrants can enter the low power section (up to 150 W) or high power (more than 150 W).

Stations may be contacted only once per band, regardless of the mode used. Send RST plus CQ zone; W/VE will send RST, state or area, and CQ zone. Count one point for each QSO with stations in your own country, two points for each QSO outside your own country but inside same WAC continent, and three points for each QSO with stations outside your own continent.

On each band the multiplier equals the sum of US states (max 48) and Canadian areas (max 13) PLUS DXCC countries (including W and VE) PLUS CQ zones (max 40). Note: KL7 and KH6 are claimable as country multipliers only, not state multipliers. Canadian areas are VO1, VO2, VE1 (NB), VE1 (NS), VE1 (PEI), VE2, VE3, VE4, VE5, VE6, VE7, VE8, VY. The final score equals total QSO points times total multiplier from all bands.

Submit a single summary sheet, including scoring calculations for all bands plus, for each band, a separate log, duplicate check list, and multiplier check sheet. Send logs postmarked by 1 December to: Roy Gould KT1N, CQ WW RTTY Contest Director, Box DX, Stow, MA 01775, USA. A comprehensive range of plaques and certificates is offered.

1998 VK/ZL/Oceania DX Contest

Phone: 3/4 October, 1000z Sat to 1000z Sun

CW: 10/11 October, 1000z Sat to 1000z Sun

The object is for stations throughout the world to contact as many stations as possible in VK, ZL and Oceania (WAC boundaries apply) on 80 - 10 m. Contacts between different countries in Oceania are permitted, but contacts within the same country are not permitted.

Categories are: single operator all bands; multi-operator all bands; and SWL. Single operator stations are where one person performs all the operating, logging and spotting functions.

Exchange RS(T) plus a three or four digit number starting at 001 and incrementing by one for each contact.

The multiplier on each band is the number of prefixes worked on that band. A "prefix" is the letter/numeral combination forming either the first part of the callsign, or else the normal country identifier for stations using their home callsign in another DXCC country, eg W8, AG8, HG7 and HG73 are all separate prefixes. The prefix for both N8ABC/KH9 and KH9/N8ABC is KH9.

Portable designators without numbers are assumed to have a zero after the letter prefix, eg N8ABC/PA becomes N8ABC/PA0. Any calls without numbers are assumed to have a zero after the first two letters, eg RAEM becomes RA0EM. Suffixes indicating maritime mobile, mobile, portable, alternate location, and licence class do not count as prefixes, eg /MM, /M, /P, /A, /E.

For each contact score 10 points on 80 m; five points on 40 m; one point on 20 m; two points on 15 m; and three points on 10 m. The final score will be the total QSO points multiplied by the total number of prefixes worked. The same prefix can be claimed on different bands.

Use a separate log for each band, with times in UTC. Show new prefix multipliers the first time they are worked. Logs should be checked for duplicates, correct points and multipliers. Logs should be accompanied by a list of prefixes worked on each band, and a summary sheet showing callsign, name, address, category, number of valid QSOs, points and multipliers on each band, claimed score and a signed declaration that the contest rules and radio regulations were observed.

SWL logs should show date/time, callsign of station heard, callsign of station being worked, RS(T) and serial number sent by the heard station, points claimed and new multipliers.

Send logs in written style to: NZART, PO Box 40-525, Upper Hutt, NZ, by 5 December 1998. Overseas entrants please use air mail. Logs may also be sent by e-mail to nzart@clear.net.nz.

Special certificates will be awarded to the top scorers in each category, in each continent, country, and VK, ZL and JA call areas. Where justified, single band awards may also be made at the discretion of the Contest Manager.

The CW entrant with the highest score will be awarded the Frank Hine VK2QL Memorial Trophy and receive an attractive wall plaque in permanent recognition of that achievement.

Entrants may be disqualified for taking credit for excessive duplicates, unconfirmed QSOs or other scoring discrepancies, or unsporting conduct. In matters of dispute, the Contest Manager's decision will be final.

ALARA

Christine Taylor VK5CTY
ALARA Publicity Officer

16 Fairmont Avenue, Black Forest SA 5035

Packet: VK5CTY@VK5TTY

As Sally told you last month we had a successful Annual General Meeting in June but, as a consequence of that meeting, you now have a new correspondent. I have a hard act to follow but, with your assistance, I will be able to keep you up to date with ALARA news.

Please send me information about your activities. So far I am only on packet or fax but hope to have an e-mail address soon. However, a letter to the address above will reach me at any time.

Changes To The ALARA Contest

1. The Florence McKenzie Trophy section

As there seem to be few new Novice operators competing for the Florence McKenzie Trophy we have decided to make this part of the ALARA Contest open to all VK YLs, not just to Novices. It is still, however, a CW competition. Remember, CW contacts score double, so warm up your keys, please. OMs, we need you, too, to boost all the scores. The Trophy will be awarded to the YL with the highest score for 'all CW' contacts.

2. Repeat contacts in the ALARA Contest

This year, for the first time you will be allowed repeat contacts. There must be at least ONE HOUR between contacts with the SAME station on the SAME band and using the SAME mode. So, if the band stays open for four hours you could have four contacts. Now that the sunspot cycle is improving this should make the Contest more enjoyable for all.

Remember, too, if your Radio Club has a Club station callsign, all your members can operate in the Contest. Also, Girl Guides groups and Boy Scout groups, if your group has a Club licence you can participate. For the last few years the VK5GGA group have made some good scores and had a lot of fun at the same time. Why not give them some competition this year?

OMs, why not participate in the ALARA Contest this year and obtain some of the more difficult state callsigns you need for the ALARA Award? You only need 10 YL

contacts but they must include at least five of the VK call areas.

Full details of the rules for the ALARA Contest will be published in *Amateur Radio*, ready for 14 November.

A 'MIR'aculous Few Months

During the several months Dr Andy Thomas was on the Russian MIR space station, many amateurs have enjoyed either or both voice and packet contacts with him. Others have listened with interest or kept track of the path of the station on their computers. It has been a most exciting time for us and good publicity for amateur radio.

I know of three YLs who made contact with MIR. Meg VKSAOV had a packet contact first, then the very day she sent off her QSL card, she had a voice contact as well. She has now received her two cards, one from ROMIR-1, and one from VK5MIR. Meg also was featured in the *Murray Valley Standard* where she said that her stomach 'lurched' when she heard Andy ask to speak to the Murray Bridge station. Once the two-way contact was established, the butterflies retreated, of course.

Meg found that Andy was very interested to hear what the season had been like in the Murray Bridge area, and he was specially interested to hear about the possibility of the mouth of the Murray closing up for lack of water flowing in it. This contact lasted almost the whole of the seven minutes he was over the horizon for her. Since the item appeared in the local paper Meg has been stopped in the street several times which shows how interested people are in it. A number of them

have no doubt discovered one of the benefits of amateur radio.

Gwen VK3DYL made her contact without a satellite tracking program. Instead, she relied on the local two metre stations to tell her when the next pass was due. She was as thrilled as all of us were to have Andy come back to her call. She says, "never underestimate the power of a YL voice" with which I would agree wholeheartedly.

Mary VK5AMD found that perseverance does eventually pay off just two days before Andy closed his station down. She had been sleeping with her handheld beside the bed (her OM, Murray, is not an amateur, just a very tolerant man). As soon as she heard a voice contact she jumped out of bed and got into the car which she then drove up a nearby hill to improve her take-off position.

During the several weeks Mary kept trying to make contact she listened to many QSOs with other amateurs who asked all sorts of questions, so she knew a lot about conditions on MIR. She had heard with interest of all the places Andy had been able to identify as he flew over so high. This had all been very interesting and had made the sleepless nights worthwhile. The contact she did eventually make was at 0412 CST (Andy was living on Moscow time on the space craft).

Mary has also found that the people living around Bordertown were very interested to read about her experience in the *Border Chronicle* even though she said that most of the visitors to her home thought she was mad getting up at all hours of the night.

She was even asked to give a talk about her experience to the local branch of

Neighbourhood Watch. They were interested in her explanation of amateur radio and ALARA for the rural woman, as well as in her conversation with Andy.

Sad News About Members

Sadly we have two SKs to report. Betty ZL1UBZ, whom a number of us met in Perth last year, passed away in February; and Daphne VK2KDX, a long time member of ALARA, passed away recently after a long battle with leukaemia. Our thoughts go out to the families of our friends.

We also extend our sympathy to Poppy VK6YF on the passing of her OM, Les VK6EB, after a number of years of ups and downs. We were all glad he was well enough to join us during the ALARAMEET in Perth.

Next Year's ALARAMEET

Don't forget to start planning to be in Brisbane in September and October 1999. Bev VK4NBC is busy planning an interesting program for all the visitors. We only meet once every three years so it is a special occasion.

Philately and Radio

We have told you previously in these columns about Marilyn VK3DMS and her success in combining these two interests. She has now been asked to display her "Radiomania" collection at the 29 October meeting of the Royal Melbourne Philatelic Society. This is a great honour on which we congratulate her. We will await her stories with interest on our Monday Nets.

News for This Column

This column depends on news from you. Please tell me your news by mail to my postal address, or by packet radio to VK5CTY @VK5TTY. ar

New QSL Bureau Addresses for India

In a letter to Region 3, Adolf Shepherd VU2AF, Honorary General Secretary of ARSI (Amateur Radio Society of India), has indicated that the Mumbai (Bombay) postal address for their QSL Bureau service has changed.

The new address for the Mumbai ARSI QSL Bureau is 'Post Box 9282 Mumbai 400 086 INDIA'. The current address will remain until 31 December 1998. The ARSI also operates a QSL Bureau in Chennai (Madras). The postal address is 'Post Box 1142 Chennai 600 061 INDIA'. QSL Bureau operators are advised to make use of these Bureaux for Indian amateurs. ar



Mary VK5AMD at the operating position of her mobile station from where she had a voice contact with Andy Thomas VK5MIR (see text).

YAESU VX-1R MICRO DUALBAND HANDHELD TRANSCEIVER

**Wide receiver coverage, leading edge features,
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convenience at a price that will surprise!**



VX-1R shown full size

The new VX-1R is one of the world's smallest dualband amateur rigs, sporting a 2m/70cm transceiver with wideband receiver in a case sized just 81 x 47 x 25mm WHD. It has impressive memory and scanning facilities as well as receive coverage of VHF and UHF TV, AM and FM broadcast bands, AM aircraft band and other public service frequencies from 76 to 999 MHz*.

Leading-edge technology from the VX-1R's 500mW MOSFET power amplifiers together with the supplied 3.6V 700mA/H high-capacity Lithium Ion battery will provide many hours of superb local communications. Up to 1W output is available for longer range when external DC power is used. Extensive battery-saving features together with the Li-Ion battery's 2-hour recharge system yields long operating times under real-world conditions.

The VX-1R's extensive memory system provides 291 memory channels, most with Alpha-numeric labelling for easy recognition. A Smart Search™ system allows you to search a portion of a band you define, then loads any active frequencies into 31 special Smart Search™ memories for later inspection (great for finding activity when visiting a new area).

Besides being a fully-featured dual-band amateur transceiver, the VX-1R has extraordinarily wide receiver frequency coverage: you'll also be pleasantly surprised by the great audio on the FM broadcast band. A dual-watch facility is provided - and together with the AM, FM-narrow and FM-wide reception modes - you'll be having fun even when you're not operating on the amateur bands. For selective calling and listening, the VX-1R also includes a CTCSS encoder/decoder and a 104-code Digital Code Squelch (DCS) system as well as a Tone Search facility for both CTCSS and DCS encoded transmissions.

A great range of accessory lines for the VX-1R are available such as speaker/mics, a carry case, as well as a battery holder for 1 x AA alkaline battery which includes an inbuilt voltage step-up converter. Computer programming of the VX-1R is available via the optional ADMS-ID programming kit.

So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

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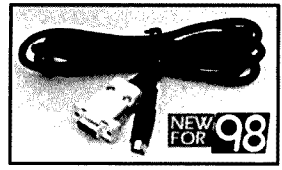
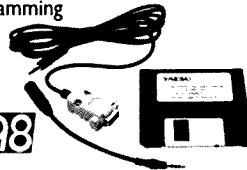
An advanced way to program many of the functions of Yaesu handheld and mobile transceivers. Each package consists of an interface that plugs into the serial port of a PC and connects to the transceiver via its microphone socket (for handhelds) or its Packet socket (for mobiles). Also provides easy-to-use 3.5" (inch) PC software with pull down menus that allow for programming and naming of memory channels, selection of output power, CTCSS tones, scan and battery saver operation, plus much more.

ADMS-1D suits FT-10, 11R, 50R/RD, 51R, VX-1R D 3753

ADMS-2D suits FT-3000M, 8000R, 8500, 8100R D 3759

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NEW FOR '98



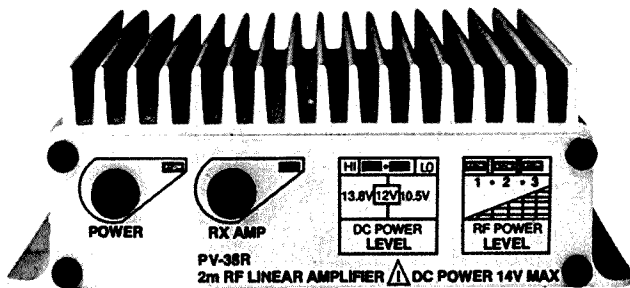
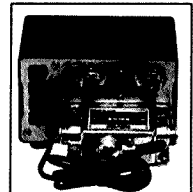
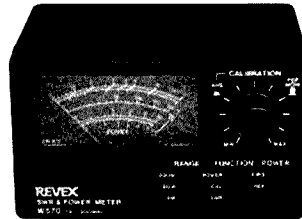
Revex W570 HF/VHF/UHF SWR/PWR Meter

Top of the line performance! The W570 provides switchable 1.6-160, 400-525, 700-1100, and 1240-1300MHz coverage, with measurement of 3 power levels (5, 20, 200W) and SWR. External UHF sensor uses N-type sockets, with remote mounting for easier cable connection to the meter.

Measures 120 x 80 x 155mm.

D 1377

\$299



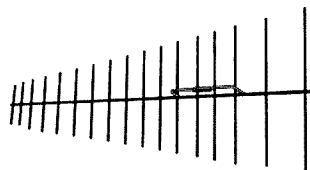
LP-1300 Log Periodic Yagi

The Maldol LP-1300 is a Log Periodic Yagi beam antenna designed to provide useful gain across the 100 to 1300MHz range. Ideal for scanner enthusiasts and ham operators needing a directional wideband antenna. Consists of a 17-element Yagi with a special feed system providing low SWR (less than 2.0:1) across the 100-1300MHz range.

Gain: 6.0dBi to 10.0dBi
 Boom length: 1.46m
 Suitable speed: 28-60mm diameter
 Max wind speed: 40m/sec
 Connector: SO-239

D 4828

\$249



2m 30W RF Power Amplifier

Ideal for use at home or in the car. It works with inputs from 0.5 to 5W, and produces up to 30W output with just 3W input. A switchable 12dB gain low noise GaAs FET receiver pre-amp is included for use in quiet RF areas. The amplifier includes a large heatsink, fused DC power lead, SO-239 input/output connectors, and simple LED metering for DC supply voltage and relative RF output power. Frequency range 144-148MHz FM only, but can be modified for SSB use. Requires 13.8V DC at 6A max. Size: 125 x 48 x 147mm (WHD) including protrusions.

D 2515

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AWARDS

John Kelleher VK3DP

Federal Awards Officer

4 Brook Crescent, Box Hill South, VIC 3128

Tel: 93 9889 8393

Every February and August the Australian DXCC listings are published. This would not be possible if it were not for the constant supply of upgrades which arrive at this office.

Speaking of upgrades, some are of the opinion that they have to save up their contacts to achieve a list of 25 before submitting this list for addition to their qualifications. Not so. That rule applies only during periods of high activity, where 25 new contacts can be achieved in a day or so.

To supplement this, and to recognise that we are presently just rising from a period of very low activity, the rule is relaxed to allow you, the hard working operator, to submit ANY number of additions to your listings, whatever the mode.

Finally, please submit your additions strictly in numerical and alphabetical order of callsign, and listed by mode, whether SSB, CW, or OPEN.

Gibraltar - The ZB2 Award

Work five different ZB2 stations. No time, band or mode restrictions. SWL OK. GCR list and \$US3.00 to: Gibraltar Amateur Radio Society, PO Box 292, Gibraltar.

Guam - Worked Guam Award

Contact any five Guam stations. No time, band, or mode restrictions. GCR list and \$US2.00, or equivalent in US stamps to: MARC, Box 445, Agana, Guam 96910.

Guantanamo Bay - Worked All Guantanamo Award

Work six KG4 stations during a three year period and send GCR list for stations still on base, and photocopy of cards for amateurs no longer stationed there. No charge, but postage or IRCs would be thoughtful. Not available for SWL. Send to: GARC PSC1005, Box 73, FPO, AE, 09593-0011, USA.

Italy - CDM Certificado del Mediterraneo Award

Provide proof of having contacted at least 25 countries surrounding the Mediterranean

since 1 January 1993. Endorsements for Phone, CW, Mixed or RTTY. Cards must be sent unless certification is made by an IARU Society Award Manager. Send log entries with QSO data in alphabetical order. Fee is \$US5.00, or 10 IRCs. Apply to: CDM Award Manager ARI, Via Scarlatti 31, I-20124 Milano, Italy.

Eligible countries are Italy, Monaco, France, Corsica, Morocco, Libya, Egypt, Lebanon, Greece, Mt Athos, Dodecanese, Sardinia, Sicily, Turkey, Gibraltar, Spain, Ceuta & Melilla, Syria, Israel, Slovenia, Croatia, Bosnia, Balearic Isl, Tunisia, Algeria, Brit Bases Cyprus, Malta, Crete, Yugoslavia, Albania, and Cyprus.

DXCC Listings

SSB - Roll of Honour

VK5MS	327/381
VK4LC	327/374
VK5WO	327/360
VK6LK	327/352
VK4OH	327/344
VK3QI	327/341
VK3AKK	327/338
VK3DYL	327/333
VK2FGI	326/332
VK6RU	325/380
VK6HD	325/350
VK1ZL	325/331
VK5XN	324/345
VK4UA	324/338
VK3AMK	321/340
VK6NE	321/337
VK5EE	321/327
VK2AVZ	319/330
VK7BC	319/329
VK3YJ	319/325
VK2DEJ	317/323
VK4AAR	317/321
VK3CSR	316/325
VK6VS	315/319
SSB - Ordinary List	
VK6AJW	312/317
VK6APK	310/315
VK5WV	306/326
VK6PY	306/312
VK3JI	304/319
VK6RO	301/307
VK3IR	295/298
VK4DP	293/305
VK2WU	291/296
VK4BG	286/302
VK3CYL	282/288
VK4SJ	269/270
VK3GI	263/267
VK3DP	261/264
VK3VQ	259/276
VK5IE	258/261
VK4CY	254/256
VK4LV	250/252
VK4ICU	249/251
VK6ANC	244/248
VK2PU	243/247
VK3CIM	242/246
VK3UY	242/244
VK6YF	238/241
VK7TS	237/238
VK2CKW	234/237
VK6APW	228/229
VK3DS	226/236
VK3ETM	226/227
VK3SM	222/242
VK5BO	217/222
VK3DD	213/217
VK4BAY	213/214
VK4EJ	210/212
VK4XJ	204/216
VK3DVT	201/204
VK3EFT	198/201
VK4AU	189/190
VK6WJH	183
VK4IL	176
WA1MKS	171
VK6APH	168/169
VK2BQS*	164/167
VK2NO	157
VK4IT	153/155
VK4CHB	152/153
VK4ARB	149/150
VK4DMP	147/148
VK2HV	142
VK2SPS	141/143
VK3DNC	141/142
VK6LC	139/140
VK2EQ	139
VK6LG	134/135
VK3DQ	127/141
TI2YLL	127
YC8EMH	126/127
VK6ABS	126
VK3TI	122/125
VK4VIS	122/124
HL4YD	118/119
VK2GSN	117/118
VK7WD	115/116
VK5GZ	112/114
VK4NJQ	111/115
VK6NV	111/113
JA8XDM	111
VK4EMS	111
C21DJ	109
JE9EMA	108
HC2HYB	106/107
VK4LW	105
VK5UO	104/107
JN6MIC	103/104
ZS6IR	102/104
KB2NEK	102/103
C21NJ	102
VK2FZR	102
JH3OHO	101/103
VK4BP	100
ON4BCM	100

CW - Honour Roll

VK3QI	327/339
VK6HD	323/344
VK3XB	315/350
CW - Ordinary List	
VK5WO	311/327
VK3KS	302/330
VK6RU	275/319
VK3JI	271/296
VK3AKK	270/275
VK4LV	252/259
VK3DP	237/240
VK2CWS	235/237
VK7BC	234/243
VK4ICU	231
VK3DQ	228/255
VK4DA	223/225
VK3EBP*	220/222
VK3CIM	219/220
VK4DP	205/216
VK6MK	202/204
VK7RO	201/204
VK6PY	190/194
VK5GZ	187/189
VK4CY	187/188
VK6HW	179/182
VK7TS	165
VK5UO	163/164
VK5BO	159/184
VK3DNC	154/157
VK4XJ	150/163
WA5VGI	146/148
VK4UA	143/145
VK7DQ	137/138
VK4AAR	134/136
VK2TB	123/125
VK2BQS*	121/123
VK3AGW	119/120
VK4CMY	117/118
SP1AFU	112/113
VK8KV	112/113
VK5BWW	110/111
VK6NV	109/110
OK1FED	109
VK2FYM	106/108
VK3DG	102
VK8XC	101/103
VK3AMK*	100/102
Open - Honour Roll	
VK5WO	327/364
VK3QI	327/342
VK3AKK	327/338
VK7BC	327/336
VK6RU	325/380
VK6HD	325/351

VK4UA	324/340
VK3JA	323/371
VK6AMK	322/341
VK2AVZ	320/330
VK3XB	317/347
VK4AAR	316/320
VK3JI	315/344
Open - Ordinary List	
VK4DP	309/323
VK6PY	308/316
VK6RO	307/313
VK3UY	307/310
VK3DP	303/307
VK4DV	301/316
VK4BG	293/312
VK4CY	289/293
VK3CYL	282/288
VK3VQ	274/291
VK4LV	272/279
VK4ICU	271/273
VK3CIM	266/270
VK5BO	264/301
TF5BW	260/264
VK7TS	253/254
VK6ANC	247/250
VK5UO	243/247
VK3DQ	241/270
VK2CWS	241/243
VK6APW	239/240
VK2ETM	238/240
VK4XJ	233/249
VK4DA	224/226
WA5VGI	216/218
VK6MK	209/211
VK2EFT	202/205
VK5GZ	196/198
VK3DNC	185/187
VK2BQS*	180/183
VK6NV	172/173
VK6APH	171/172
VK4CHB	160/162
VK2NO	158
VK8XC	150/152
VK6LC	142/144
VK2HV	142
VK4NJQ	133/139
VK4EZ	129/138
YB8GH	127/129
VK3VB	126/128
VK4CMY	120/122
VK7HV	114/117
SP1AFU	114/115
VK2FYM	113/115
VK3OZ	104/105
* = RTTY	ar

Pounding Brass

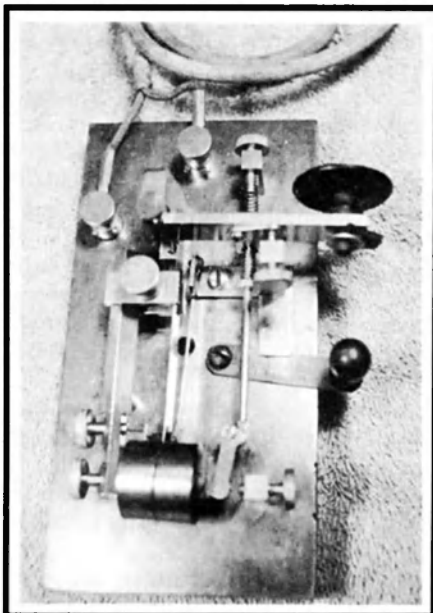
Stephen P Smith VK2SPS
PO Box 381 Mona Vale NSW 2103

I've been receiving quite a lot of inquiries lately about American made semi-automatic keys other than the more common Vibroplex models which are still being manufactured today.

To help with identification I've included photos of a number of keys manufactured by the prominent companies of that era.

Next month I will be discussing cryptic codes as used in the earlier part of this century.

ar



A Mecograph Model 2, produced by the Mecograph Company of Cleveland, Ohio about 1914.

Was that 'Global Positioning System' or 'Guiding the Police Service'.

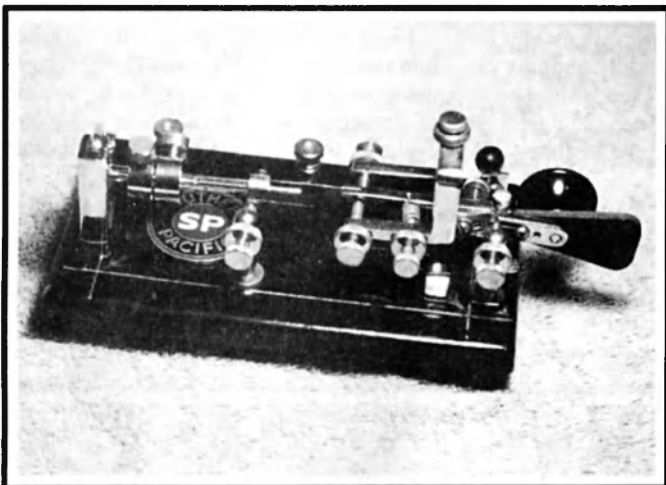
There are many uses for a GPS, but this one reported from the UK, takes the prize, for now anyway.

When a body weighed down by an anchor was caught in the nets of a fishing boat, a police murder investigation was launched. The body was identified as a man whose identity had been stolen, it seems, by a man the police had suspected of allegedly murdering him and then dumping the body.

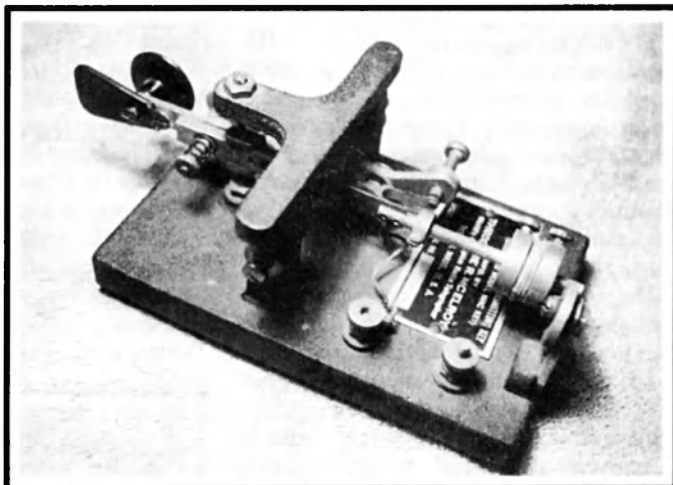
On arrival at the suspect's yacht, the police found a GPS Navigation unit which showed he had been close to the area in which the body had been dumped at about the time it was believed to have occurred.

It appears police had the suspect right where they wanted him!!

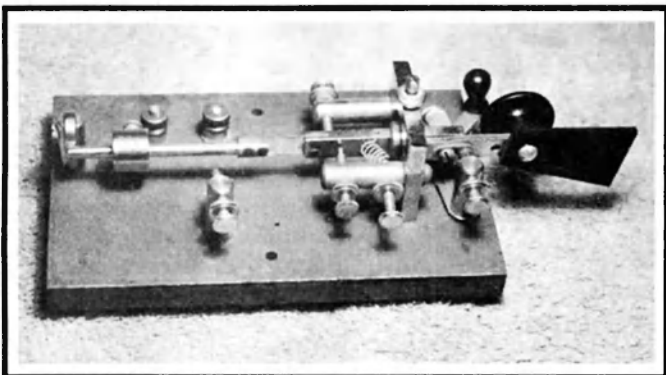
ar



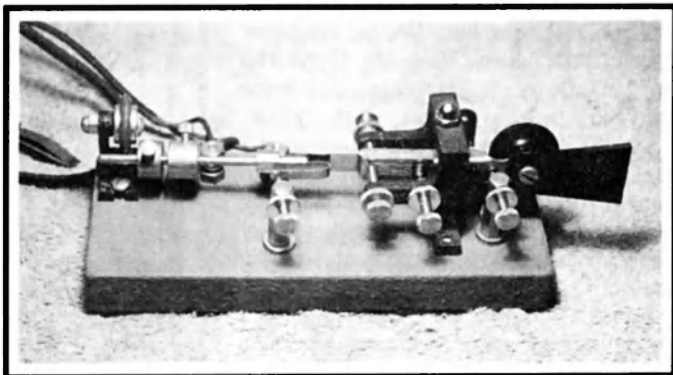
A Southern Pacific Railway copy of the Vibroplex Original.



A 1937 Mac Key, made by Ted R McElroy, World Telegraph Champion.



A Telegraph Apparatus Company Bug, made in Chicago, Illinois in the 1940's.



The only semi-automatic ever made in kit form by the Electric Specialty Company, Cedar Rapids, Iowa.

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Recently I had the privilege of attending the Conference of Affiliated Clubs of the NSW Division of the WIA. Among the many discussion items proposed by the clubs there was one which particularly caught my eye.

The Mid-South Coast Club proposed that the WIA take steps to bring to the attention of all operators the lack of common courtesy and consideration of others, which is becoming increasingly evident on the HF bands.

The supporting comment stated that, "*HF band conditions have improved to the point where long distance propagation is possible on any band at almost any time. This means that our shortcomings in on-the-air behaviour are likely to be heard frequently in other countries. Australia will be 'on show' to the whole world during the year 2000 Olympic Games.*"

Unfortunately, human behaviour cannot be modified by laws and regulations. Education and personal examples of good amateur practice might better influence some of our modern day amateurs, who grew up in a society where selfishness, instant performance, instant gratification and instant success are expected and demanded irrespective of the right of others.

The word "tolerance" seems to be increasingly missing from our day to day language and personal behaviour. Bad behaviour, of course, is not only on HF bands. Those who use 2 metre voice repeaters can tell a similar story.

The NSW Division of the WIA passed a ten point "Code of Conduct for Radio Amateurs" at their annual General Meeting held on 20 April 1996. I wonder how many amateurs in NSW or other parts of Australia are familiar with those points?

I further wonder how many amateurs remember the words of the original Amateur's Code, which was written by Paul Segal W9EEA in 1928, seventy years ago? Segal said that a radio amateur is considerate, loyal, progressive, friendly, balanced and patriotic.

He explained that a considerate radio amateur never knowingly operates in such a way as to lessen the pleasure of others.

A radio amateur offers loyalty, encouragement and support to other amateurs, local clubs and the ARRL (this could be read in our case as the WIA), through which amateur radio is represented nationally and internationally.

Being progressive means that a radio amateur, said Segal, keeps abreast of times in science, has a well built and efficient station and the operation of the station is above reproach.

A radio amateur is slow and has patience when so requested, has friendly advice and counsel for the beginner, and is kind in assistance, co-operation and consideration for the interest of others. These are the hallmarks of the amateur spirit.

Amateur radio is a hobby, never interfering with duties owed to family, job, school or community.

Finally, said Segal, the radio amateur's station and the skill of the amateur is always ready for service to country and community.

Willis Island VK9WG

Graham VK5GW, who spent six months on Willis Island in 1996 and 12 months on Macquarie Island in 1997, and is attached to the Australian Bureau of Meteorology, is back on Willis Island from the end of June 1998 for about six months.

He will be active under his old callsign of VK9WG. QSL direct via VK5GW with a reply envelope and "one green stamp" for overseas stations, and a SASE by Australian amateurs. Cards to be sent to: Graham Whiteside, 33 Maud Street, Unley, SA 5061.

Be patient and wait for the reply cards which will arrive in the early part of 1999 after Graham has returned from Willis.

Antarctica - VKO

In mid July last year I met Tom VK0TS, who spent a year on Macquarie Island in 1997. He was on his way to Hobart in Tasmania. Contrary to some other reports, Tom is not yet in the Antarctic. He was accepted as part of the ANARE personnel for the 1998-1999 year on Davis base, Antarctica (approx 80° E, 68° S). Before Tom gets to Antarctica he has to take part in a compulsory training course at ANARE Headquarters in Hobart. Tom will leave Hobart mid-October for Davis and doubts that he will be active before January/February 1999 at the earliest.

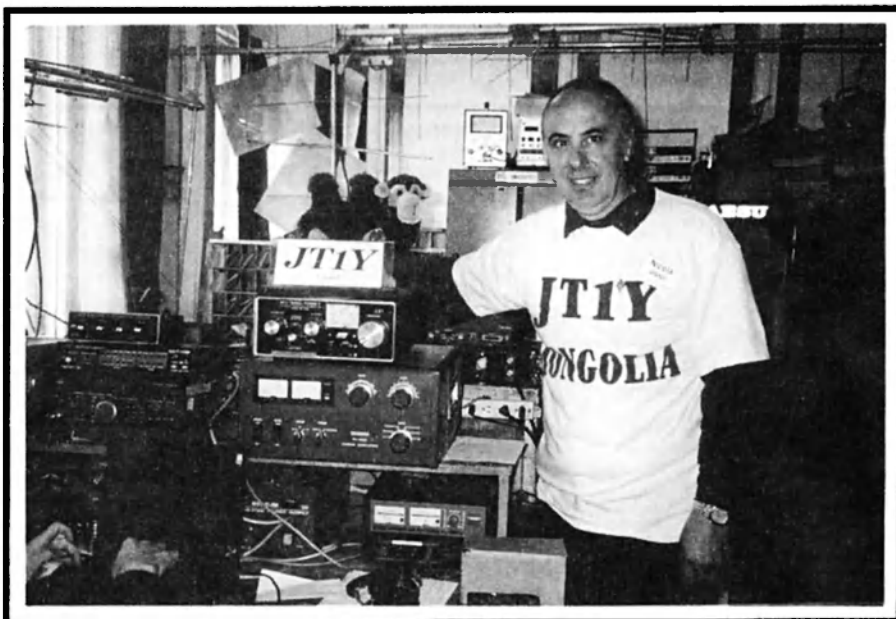
He is not sure whether he will retain his present callsign, or will apply for a different one. He will also have a new QSL manager for the activity from Davis, details of whom will be released later.

Vanuatu - YJ8AA

Frank YJ8AA, who used to be a regular on the "ANZA" net, has not been heard of for a long while.

I sent him a card in May, which reached him a month later in Vanuatu. His reply came not so long ago. Frank is off the air because of damaged equipment. There were two cyclones in Vila, very close to each other earlier in the year.

Frank says he survived the first one without damage, but the second one damaged his Yagi antenna and other equipment. He managed to wind down the mast to a height of about 8.5 metres, but no one was around to help him, and he was unable to lower it further.



Nicola I0SNY, the leader of JT1Y, in the JT1KAA Club's "ham shack".



The ten member Italian DXpedition which operated JT1Y, visiting the JT1KAA Club station.

His beam is now in a mess. Rain water got into his power supply which is still not working, and his amplifier suffered damage also. Frank says he will be back on air as soon as he can, but he really needs help with his mast and Yagi.

Frank sends his good wishes to all his friends in VK and ZL, and hopes to be around for many more years, health permitting.

Yemen - 70

Zoli HA5PP, who visited Yemen last year, was again in Sana'a, Yemen in June this year. His trip was made possible with the assistance received from K4TKM and the Northern California DX Foundation.

Zoli met the Deputy Minister of Telecommunications in Yemen, who told Zoli that Yemen wants to establish amateur radio in that country. Zoli made an application to operate and requested the 708DX and 708CW callsigns for the activity from Sana'a, and 701A for Aden.

In turn, Zoli offered to build four complete stations in Sana'a, Taiz and Aden.

He also offered to conduct education classes for the Yemenis dealing with ham radio. These classes are planned to take place between 1 September and 1 December. Zoli also made a promise to the Yemenis that he will ask the Secretary of the IARU to help Yemen to join the World Amateur Organisation.

Zoli was told by the Deputy Minister that there are a lot of applications from other hams around the world who want to operate from Yemen. The Deputy Minister was sympathetic about Zoli's application and, according to Zoli, he said, "Mr Zoli, I like your application. You will be the first foreign

operator in Yemen, but the very first operator will be a Yemeni. Foreigners only after the Yemeni operators". Zoli further promised that he will contact all the hams of the world who want to help and operate from Yemen, but he now wants your help. Contact him by e-mail at navus@mail.mata.vu as soon as possible.

It seems to me it will be a little while yet before we have a genuine approved activity from Yemen.

Thailand HS0/VK3DXI

Mirek planned to be active from Phuket Island, IOTA AS-053 from 27 June to 1 July, mainly on CW, from 40 to 15 metres on the usual IOTA frequencies. Cards for this and other operations should be sent to his QSL manager DL4DBR, and NOT through the Australian QSL Bureaux. His manager's address is: Thaddaeus Barczyk, Papelstr 34, D-58099, Hagen, Germany.

Mirek advises that there is a mailing problem in Thailand - letters disappear, often even registered ones. Mirek has been in Thailand now for 21 months and his tour of duty will end in August. He is not sure where he will go from there.

According to Mirek, finally the Thai Telecommunications administration will give the Thai amateurs a new band plan allowing access to WARC and all modes of transmission. It is hoped that activity on 160 and 80 metres will be allowed also. Mirek says there are 100,000 hams in Thailand.

Tristan da Cunha - ZD9IL

Some interesting snippets of news came from Edwin ZS5BBO, the QSL Manager for Ian ZD9IL. Ian is the chief radio operator on the island of Tristan da Cunha. He is very active

on amateur radio on SSB on the 10, 12, 15, 17, and 20 m bands and operates daily from 0900 to 1600 UTC.

Ian uses a Kenwood TS-130S and a dipole antenna running about 100 watts. He is desperately looking for a beam antenna for 10, 15 and 20 m, and also for the 12 and 17 m bands. If you can assist, as an individual or as a radio club, Edwin ZS5BBO wants to hear from you.

As shipping schedules to and from the island are very restricted, the log books for the period from 27 November 1997 will arrive with Edwin in the first week of August. Anyone who worked Ian and wants a QSL card, will now receive a card from Edwin. The address is: Edwin Musto, PO Box 211032, Bluff, 4036, South Africa.

Future DX Activity

* **Cyprus - 5B4.** Steve G3VMW and Bob G3ZEM will be active from 21 July to 5 August as 5B4/G3VMW and 5B4/G3ZEM from Pathos. QSLs via G3ZEM, R Henderson, Whitwell House, Whitwell on the Hill, N Yorks, YO6 7JJ and G3VMW, S Wilson, 3 Craig Gardens, Bramham, Wetherby, West Yorks, LS23 6RP, England.

* **Uganda - 5X.** Don KD4UDU is active from Kampala, Uganda until the middle of August as 5X1DK. QSL to home call.

* **Taiwan - BV.** Jurgen DJ3KR is active from Taiwan until 12 August as BV/DJ3KR. QSL to: J Rottger, Tarfalavagen 1 C, Kiruna, S-98144, Sweden.

* **St Paul Island - CY9.** The St Paul Island DXpedition CY9AA (see *Amateur Radio* June 98 issue) has been cancelled.

* **French Polynesia - FO0.** Albert FO5JR will be active from Rimatara Island in the Austral Group on CW around 14010 and 21010 kHz. QSL via home call, bureau or direct via: Box 10127, 98711 Paea, Tahiti, French Polynesia.

* **Tromelin - FR/T.** Jacques FR5ZU has cancelled his trip to the island until at least the end of the year.

* **Midway Island - KH4.** Ted NH6YK will be active from 1 to 15 August as KH4/NH6YK. QSL via home call.

* **Falkland Islands - VP8.** Carl VP8/G4FVU/mm is working on an oil rig off the Falkland Islands. When he is on land he uses the callsign VP8CZJ. He also talks about a possible trip to the South Sandwich Islands for two weeks in January or February 1999. QSL via G0HXL, E Calthorpe, Rowles College, School Lane, Rothwell, Lincs, LN7 6BB, UK.

* **Brunei - V8.** Gary VK8GW is now active as V8GTW on the SEANET frequency of 14320 kHz at 1200 UTC, and afterwards on 15 m. QSL via: Gary Woods, PO Box 1956, BSB, Brunei Darussalam 1919, Brunei.

* **Nigeria - 5N0.** Jaromir 5N0/OK1AUT was heard on CW on the 40, 20, 17 and 15 metre bands. QSL via home call to: Jaromir Klimosz, Ploj Harova 7, 1892, CS-16200, Praha 6, Czech Republic.

* **Botswana - A22.** Charlie W0YG will be active from 6 to 26 August as A22/W0YG mostly on CW on 40 to 10 metres, the WARC bands, and possibly 160 metres, with wire antennas and an amplifier. QSL via his home call, Charlie Summers, 6746 North Yucca Trail, Parker CO, 80138-6110, USA.

* **Central Africa - TL.** Alex TL5A is now operational on all bands. QSL via PA3DMH, Alex van Hengel, Schoener 85, 2991 JK, Barendrecht, The Netherlands.

* **Miquelon Island - FP.** The Prairie DX Group will be active from Miquelon Island as FP/N9PD between 26 August and 1 September. QSL via N9PD.

* **Caribbean Tour.** Rob PA3ERC and Ronald PA3EWP will be active from Jamaica 6Y from 27 August to 8 September, and from the Cayman Islands ZF from 8 to 20 September. QSL via PA3ERC, Rob Snieder, Van Leeuwenstraat 137, 2273 VS, Voorburg, The Netherlands.

* **Ethiopia - ET3.** A group of UK amateurs will be operational from Addis Ababa as ET3AA between 18 and 27 September from the club station of the Ethiopian Amateur Radio Society. QSL via G3VMW, S Wilson, 3 Craig Gardens, Bramham, Wetherby, West Yorkshire, LS23 6RP, England.

Interesting QSOs and QSL Information

* **ZB2AZ** - Ross - 14005 - CW - 0542 - June. QSL via PO Box 292, Gibraltar, Europe.

* **PT7BZ** - Ely - 14200 - SSB - 2140 - June. QSL via Brazilian QSL Bureau.

* **T97M** - 14016 - CW - 0634 - June. QSL via K2PF, Ralph G Fairello, 23 Old Village Road, Hillsborough, NJ 08876, USA.

* **TU2DP** - A1 - 14202 - SSB - 0649 - June. QSL via K4MQL, James N Burdette Jr, 1035 Presidential Drive, Dallas, GA 30087 USA.

* **FO0HAR** - Ed - 14164 - SSB - 0555 - June. QSL via K8VIR, Ed Hartz, PO Box 480, Green Valley, AZ 85622-0480, USA.

* **FS5HI** - Inario - 14195 - SSB - 0536 - June. QSL via WA4JTR, Thomas A Haney, 505 Womack Rd, Covington, GA 30209, USA.

* **9H0A** - Kai - 28006 - CW - 0507 - June. QSL via LA2TO, Kai Martin Mauseth, Ellen Gleditsch v 9, N-0987, Oslo, Norway.

* **KH3AE** - John - 14034 - CW - 0734 - June. QSL via KH3AE, John B Bartlett, 51 138 Kamehamea Hwy, Kaawa, HI 96730, USA.

* **J49IL** - Karl - 14025 - CW - 0555 June. QSL via DJ5IL, Hansjuergen Wermund, Uhuweg 16, D-76149, Karlsruhe, Germany.

* **CO6XN** - Abel - 14194 - SSB - 0624 - June. QSL via PO Box 1, Venegas, 64180, Cuba.

* **TF3DX** - Vil - 14034 - CW - 0648 - July. QSL via Vilhjalmar Thor Kjartansson, Silungak Visl 10, 15-110, Reykjavik, Iceland.

* **VP2VF** - Dirk - 14226 - SSB - 1145 - June. QSL via Dirk J de Jong, Box 137, Road Town, Tortola, British Virgin Island, Caribbean.

From Here and There

* **AX2ITU.** The NSW Divisional special event station was active for 24 hours on 17 May. Eight operators made 530 contacts with 49 DX entities on the 15, 20, 30, 40, and 80 m bands, and on the 2 m and 70 cm bands. 215 contacts were made using SSB, the rest using CW. In addition, the Divisional Broadcasting station VK2WI, using the AX2ITU call for one hour for call backs, made 87 contacts on the 6 and 2 m and the 70 and 23 cm bands.

* **VK Amateur Licences.** It was interesting to read the statistical data about the Australian radio amateur licences as at April 1998 (page 6 of July *Amateur Radio*). A few weeks ago I read in the "Australian Radio Amateurs Advancement Association (ARAAA) Newsletter" the following statistics as at April 1997. At that time, quoting ACA figures, this was the situation: Unrestricted 9724, Intermediate 1372, Limited 2882, Novice 2059, Novice Limited 260, a total of 16297. In addition there were 461 repeaters and 53 beacons.

The same source quotes the New Zealand figures as follows: General 3803, Limited Novice 73, Limited 2554, and Novice 31, a total of 6061. In addition, there were 204 repeater stations and 32 beacons.

* **VM4AA** - Silent Key. During the past

12 months I mentioned John Keith McCarthy VM4AA several times in this column. "Macka", as he called himself, was a retired RAAF Squadron Leader living in Runaway Bay on the Queensland Gold Coast. He was 87 years old and he was active with his unique callsign on the 20 and 40 m bands working CW. A few weeks ago Ray VK4BAY, President of the Air Forces Amateur Radio Net, advised me that "Macka" became a Silent Key on 8 May.

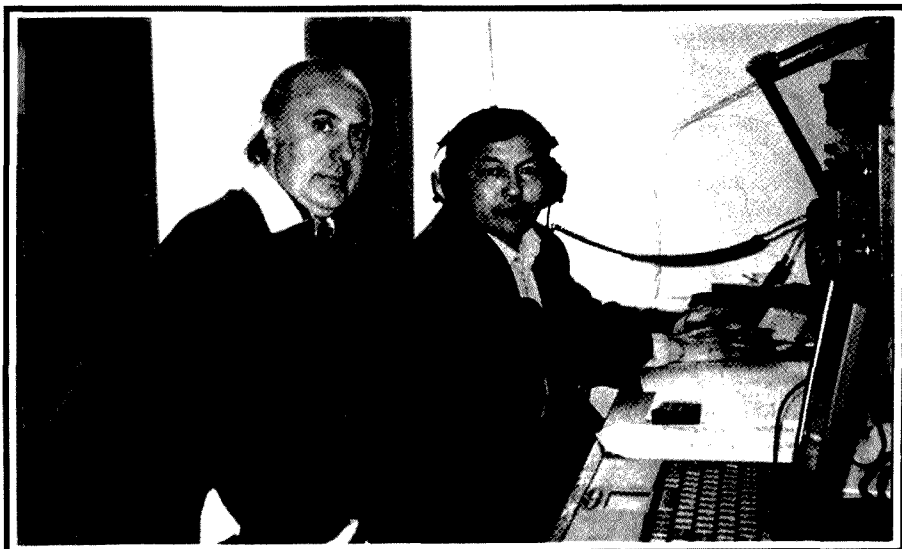
As if "Macka" had sensed what was coming, he checked in three times into the AFARN net before his death, using SSB which he "hasn't worked for yonks", as he told Ray. The unique "VM" prefix, the only one in Australia, has died with him.

* **Easter Island - CE0.** Ed K8VIR has returned to French Polynesia after spending some time activating Easter Island with the callsign XQ0/K8VIR. QSL to his home call.

* **QSL cards for the FO0MAC and FO0PAP DXpeditions** should be sent to K8OU, via EIDX Network (Trustee K8YSE), 4910 Royalton Rd, North Royalton, OH 44133-4049, USA.

* **Argentina - LU.** International postage rates have been increased in Argentina. To send a letter from Argentina to VK/ZL it will now cost "two green stamps".

* **5X1Z - QSL Information.** Mats SM7PKK has appointed a QSL manager for his present activity as 5X1Z. QSL is now via SM6CAS, Nils Goeran Persson, Box 2050, Hovas, SE436 02, Sweden. Please note also that SM6CAS now handles the cards for all the past operations by Mats: 3D2CT and 3D2CU (Conway Reef), 3D2KK, 3D2XR (Rotuma), 4X/SM7PKK, 5W1HK, A35KK (OC-064), FW/SM7PLL (Wallis OC-054), KH6/SM7PKK, KH8/SM7PKK, SV9/SM7PKK, T33KK (Banaba), TF4/SM7PKK



I0SNY and JT1BH at the console of JT1Y.

(Flatey Isl EU-168), VK2FVD, WH8/SM7PKK, ZK1XI (South Cook OC-013), and ZK2KK.

* **Malpelo - HK0.** Roberto HK0TU has said that the official 1999 Malpelo DX-pedition is now well under way and is planned for September and November of 1999. This expedition is fully backed by LCRA, The Colombian Amateur Radio League.

* **Western Sahara - S0.** Mark ON4WN was active with the call S07WW from 21 to 26 June. He works for the UN and is stationed in Algeria for a few months. During the day he attended to his professional duties and during the night he was active on amateur radio. He concentrated on CW and was heard in Europe, North America and Australia on a variety of bands.

He is a good CW operator with good operating skills. QSL via ON5NT, Chrislain Penny, Lindestraat 46, B-9880, Aalter OV, Belgium.

* **Algeria.** Sadek 7X2LS appeared on the ANZA net in July. According to Brian VK5FV, Sadek said that 70% of the mail sent to his call book address goes astray. Please send your QSL cards to S Laskri, 51 Rue Edmond Bonte, 91130, Ris Orangis, France.

* **Brunei** has changed its prefix from V85 to V8. All new licences are either 1 x 2 or 1 x 3 letters with V8 as the prefix.

* **Mongolia - JT.** The Hungarian Pannon DX Club made 23,146 QSOs as JU1HA and JT1X during May. QSL via Szabo Laszlo HA0HW, PO Box 24, Puspokladany H-4151, Hungary.

* **Antarctica.** VK0TA has been heard from Davis Base on SSB at around 2315 UTC on 14122 kHz.

* **World Football Cup.** QSL cards for the stations which were active during the celebrations could be sent via the Bureau. Besides the individual French Stations with the FBC prefix, there were ten special event stations with the callsigns TM0CMF to TM9CMF, with individual QSL managers indicated during the QSO.

* **Amsterdam Island.** Eric FT5ZG was active from Amsterdam Island during last December. His cards are now arriving in Australia from his QSL manager F5RQQ, Jean-Marc Vigier, 4 Impasse des Lys, 63800 Cournon d'Auvergne, France.

* **Western Sahara.** There is a newly licensed amateur with the call S01HA. QSL manager is EA2JG.

* **Armenia.** The EK QSL Bureau operates only as an incoming bureau. EK stations must QSL direct in responding to any cards received by them through the EK Bureau.

* **Guam - KH2.** According to Jim KH2D there are only two active operators left on Guam, N2NIL/KH2 and KH2D. On Saipan, WH0AAV is the only one active.

* **Thailand.** Ray G3NOM has moved to Thailand. His new address is: Ray Gerrard, PO Box 1300, Bangkok 10112, Thailand.

* **Guadeloupe.** Baldur DJ6SI is active as FG/DJ6SI. He is usually on CW. QSL via home call.

* **Kosrae Island.** Nishi V63AO has moved from Pohnapei to Kosrae which is within the V63 group. His new address is: Mr Nishi Nishimura, PO Box 607, Kosrae, Micronesia, 96944 USA.

* **Market Reef - OJ0.** Seppo OH1VR and Jorma OH2KI were active from Market Reef in July. QSL via OH1VR, Seppo Sisatto, Lansirinteen 23, 33400 Tampere, Finland.

* **South Africa - ZS6.** The special event station ZS80NRM celebrated President Nelson Mandela's 80th birthday. QSL via ZS6Y Etienne Swart, PO Box 12, Strubens Valley, 1735 South Africa. No IRCs please.

* **Pakistan - AP.** Amir AP2AGJ has been heard lately on the bands. His QSL address is: Amir Gulistan Janjua, House No 56, Chaklatal, Rawalpindi, Pakistan.

* **Greece - SV.** Greek amateurs are now allowed to use the 6 metre band on a secondary basis as the primary use of the band is reserved for the Greek army. Foreigners, irrespective of their licence status, will not be given licences to use the band.

QSLs Received

BV4ME (1 m - op); K7K (4 m - AH0W/7); VK9WG (19 m - VK5GW); 5B4MF (1 m - op); 5B4XF (3 m - op); JT1Y (4 w - I0SNY); VK2IOM (4 m - VK2BEX); TG9NX (4 w - N4FKZ); VI6EWT (3 m - VK6ANC); FW2EH (6 w - DJ2EH).

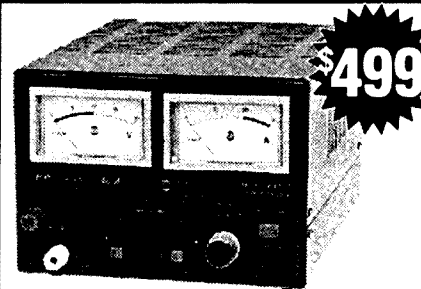
Thank You

Many thanks to my fellow amateurs whose assistance in compiling this column is very much appreciated. Special thanks to VK2EFY, VK2EJM, VK2KFU, VK2TJF, VK2XH, VK4BAY, VK4LV, VK4VIS, VK5FV, VK5GW, VK5WO, I0SNY, YJ8AA, ZS5BBO, *INDEXA News*, *Ohio Penn DX Bulletin*, *QRZ DX*, *The 425 DX News*, *The DX Newsletter* and the *DX News Magazine*. ar

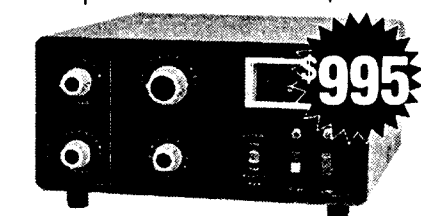
"Winnie the War Winner" Follow-up

For those who read and enjoyed the historical article "Winnie the War Winner" which appeared on pages 20 and 21 of last month's *Amateur Radio* magazine, Ken Bridger VK3JII has advised that a War Museum photo of this "weird but wonderful set" was published on page 20 of the March 1980 issue and again on page 27 of the August 1984 issue of *Amateur Radio* magazine. ar

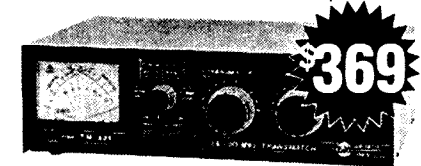
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AMSAT Australia

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Success and Disappointment

First bit of good news. Our heroes have been at it again. Two new amateur radio digital store and forward satellites are now in orbit.

TMSAT-1 was successfully launched from Baikunur Cosmodrome. It was launched at 0630 UTC on 10 July 1998. After being placed into an 821 km sun-synchronous orbit, TMSAT-1 was switched on and began sending data on its downlink frequency of 436.925 MHz with a power output of approximately two watts.

Reports indicated that it was transmitting a few kHz higher than its nominal frequency. This was expected to correct itself as the satellite warmed up slightly when all equipment was turned on permanently. Chris G7UPN/ZL2TPO will load the flight software to the on-board computer and then start stabilising the attitude.

For the few days I was able to listen prior to the deadline for this copy, TMSAT-1 was obviously tumbling in orbit as the signals were fading from S9++ down into the noise level. A brief overview of the TMSAT satellite and commissioning plan is available at the Internet Web site http://www.ee.surrey.ac.uk/EE/CSER/UOSAT/amateur/tmsat/tmsat_commissioning_plan.html.

Second bit of good news. Also launched aboard the same RESURS-O1 spacecraft was the TechSat-1B satellite from Israel, another digital store-and-forward satellite using 9600 baud frequency shift keying (FSK), much like UO-22, KO-23 or KO-25. TechSat-1B will also feature VHF/L-band uplinks, with downlinks in the 70 cm band.

At the time of writing the satellite is transmitting a 9600 baud burst three seconds in length every 30 seconds. 4X4AS is estimating that it will be several weeks before the initial in-orbit testing is completed. In the meantime, TechSat will continue its present burst-mode transmission format. A TechSat Web site is available at: <http://www.technion.ac.il/~asronen/techsat/>.

Congratulations are very much in order for the TMSAT-1 and TechSat-1B launch teams for these additions to our ever-expanding flight of digital birds. By the time you read this column both satellites should have been fully commissioned and will be providing the amateur satellite fraternity with much increased digital message capacity.

The most exciting thing about TMSAT-1 is its 34.4 kilobaud downlink. This is still very much an experimenter's mode as our "normal" amateur receivers will not handle the greatly increased bandwidth required for the higher baud rate. A number of designs are in the pipeline for "add-ons" and free standing units to cope with this mode. When fully exploited, this mode will rival the present state of the internet art for download capacity.

Picture files of several megabytes come to mind as a typical application. When coupled to its CCD camera, the high speed downlink will allow TMSAT-1 to produce high resolution cloud and earth terrain pictures of a quality approaching that of the APT pictures available in the public domain from NOAA weather satellites. We can look forward to TMSAT-1 being the first of a new generation of very capable amateur radio satellites.

TechSat-1B is also pushing things further with its "L" band uplinks. Thus far we have only seen operational "L" band on the high orbit satellites where they were only turned on around apogee. It will be time to dust off the old 1296 MHz gear and grapple with the complexities of antenna and Doppler tracking a low-earth-orbit bird in the microwave region. Once again this will test the capabilities of our gear to the limit.

Disappointment. The most disappointing news to come in for some time arrived last month. It concerned the launch of the long awaited Phase 3D spacecraft. It appears we have been out-bid by commercial interests for a place on Ariane-5. The launch of Phase 3D has been postponed indefinitely!

One could feel Karl's sadness in making the announcement. The decision was made by Arianespace, the marketing arm of the European Space Agency, ESA. A figure of around \$35,000,000 was sought from a launch customer. This is only half that normally sought due to the rather shaky start of the A-5 series and yet clearly beyond the resources of the amateur radio community.

No customer has been found so far and the rocket may even go into space with a dummy payload in order to prove the A-503 system, the money being put up by Arianespace in order to be better able to sell space on future launches.

The problem of an alternative launch vehicle is compounded by the fact that Phase 3D has been designed and built to fly on Ariane-5. It could be modified to suit an

AMSAT National Co-ordinator

Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org

AMSAT Australia Net

The AMSAT Australia net is held on 80 and 40 metres LSB each Sunday evening. During daylight saving time in South Australia the net is on 7068 kHz +/- QRM with an official start time of 1000 UTC (with early check-ins at 0945 UTC). During the rest of the year, the net is on 3685 kHz +/- QRM with an official start time of 0900 UTC (with early check-ins at 0845 UTC).

AMSAT Australia Newsletter and Software Service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand, and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia
GPO Box 2141
Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, <ftp://amsat.org> and following the sub-directories to "KEPS".

Ariane-4 rocket but, being quite bulky and weighing in at 600 kilograms, it requires a substantial launcher.

The required orbit is another limiting factor. A geo-stationary transfer orbit (GTO) is best for our requirements and that limits the launch vehicles to those carrying-satellites destined to go into geo-stationary orbit.

The Space Shuttle, for example, would not be suitable. Nor would the numerous launchers carrying low-earth-orbit satellites into orbit. AMSAT will be looking at other launchers which go to GTO to try to get Phase 3D off the ground as soon as possible.

Listening for the Lunar Prospector

Looking for a real challenge? Here's one that's tough but achievable. See if you can detect the signals from the Lunar Prospector currently orbiting the Moon. If you can connect to the Internet World Wide Web, have a look at: <http://www.geocities.com/CapeCanaveral/Hangar/8389/lunar.html>.

On that site, Joe Steinmetz KC6SZY describes and shows images of his receiving set-up that has successfully detected the radio signals from the Lunar Prospector. Joe used gear which is not beyond the scope of the adventurous amateur. A small steerable dish,

50 cm or so in diameter will do the trick. A simple but efficient feed would be the G3RUH short helix system which will be familiar to many amateurs. I use such a feed on my 1.6 metre dish.

The signals on 2273 MHz are received using a modified TV down converter. The modifications are simple and are covered comprehensively on the Web site.

Now we come to the hard part. No matter how good a pre-amp or down converter you may use, the 3600 baud digital signals are so weak as to be virtually inaudible. Even if they were much stronger they would only appear as noise to the ear. A more subtle method is needed to detect their presence.

Joe uses software called FFTDSP. This is a Digital Signal Processing program (that's the DSP part of the title). It is used to detect and display the signal. The program is written and supported by Mike Cook AF9Y. Such a system can detect very weak signals from a radio receiver using real-time Fast Fourier Transforms (that's the FFT part of the title, a form of mathematical trickery).

The audio signal is fed into the PC via a sound card and the resulting output can be either played 'real time' through the software or saved as a .WAV file for later analysis.

How does it work? Amplitude levels for each FFT frequency are converted to colour and displayed on the PC as a continuous spectrograph. The resulting screen simultaneously shows the output of 640, 2 Hz (yes, that's two Hertz) wide "filters" between approximately 300 and 1500 Hertz. Try doing that with lumped constants.

Each horizontal line represents the output of all 640 filters during a 0.5 second period. Over time, as each line is added to the screen, the eye can begin to see weak signals emerge from the darker background. This method is similar to that used by Darrel AA7FV in 1997 to detect the 435 MHz test signal from the Mars Global Surveyor (MGS) when it was some six million km from earth.

The site contains some FFTDSP plots of signals from the MGS heard using a pair of 10 turn helix antennas, a low noise pre-amp and an amateur radio transceiver. Listening for the signals from the Lunar Prospector is not quite so demanding as the MGS endeavour, but it would make a very worthy project for the determined amateur. The Web site contains many links to other sites of interest including a download site for a demo version of the FFTDSP software. It should be of great interest to those who enjoy the challenge of very weak signal reception. The method could find application in EME, aircraft enhancement, VHF/UHF DXing, beacon monitoring and other weak signal modes. You may even detect signals from defunct satellites - anyone remember Arsene? ar

Spotlight on SWLing

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E-mail: robroy@tassie.net.au

World Radio TV Handbook

A new editor of the *World Radio TV Handbook* has been appointed. He is David Bobbett, an English journalist who has had experience with various technical publications such *Ham Radio Today* and *RadCom*.

The editorial offices have also been moved from Amsterdam to Milton Keynes in the UK. Andy Sennit, the former editor, is now a communications consultant and frequently contributes to Radio Netherlands "Media Network". The new address is WRTH, PO Box 7373, Milton Keynes MK12 5ZL, United Kingdom. E-mail to editor@wrth.demon.co.uk.

The falling currency rates have made this publication very expensive and many DX clubs in Australia have been debating whether it is now worth obtaining. Circulation has been dropping steadily and other publications such as *Passport to World Band Radio* and the *Klingenfuss Shortwave Guide*, are more geared to the DXer and the short-wave listener.

The costs of importing hundreds of copies for resale with a very weak Australian dollar means that it has become somewhat questionable. Often, by the time it has reached Australia, particularly via surface mail, the information is outdated or obsolete.

Electronic distribution via the Internet has made it possible to be updated almost instantly with changes. However, there are still quite a number who don't have access to the Net. I have not obtained a *World Radio TV Handbook* for a number of years, preferring the *Passport to World Band Radio*.

Radio for Peace International

The Costa Rican station 'Radio for Peace International' has been recently logged on 6980 kHz USB. The times are between 0400 and 1200 UTC.

However, there are a number of Australian utility stations on that channel and Radio for

Peace International was causing interference between 0400 and 0700 UTC. A complaint was lodged and, as I am compiling this, Radio for Peace International is looking for another channel. Most of the complaints come from south-eastern Australia.

Glen Hauser said on the "World of Radio" that the Tasmanian Government lodged a complaint. My sources say it came from the ACA. The ACA has for some time noted that many of the Australian domestic HF circuits have been receiving interference from some international broadcasting stations operating on frequencies normally outside the allocations for Broadcasting. Many of these are American religious stations.

Radio New Zealand International

Radio New Zealand International has had their budget slashed by \$NZ130,000 which means that some programming has been axed. All dedication programming has been axed, including the Brass Band program with Rudi Hill which was one of my favourites.

News bulletins in Pacific island languages will be heard in the morning but the bulk of the programming will consist of a relay of the National Program. Also, they will close down two hours earlier at 1010 UTC.

Radio Free Asia

Radio Free Asia (RFA) apparently has purchased KHBI on Saipan from the Christian Science Publishing Company. RFA has been, up until now, leasing airtime from various sites and this will be the first dedicated RFA site in operation. The Society will be continuing to utilise KHBI for some programming as well as WSHB in South Carolina.

Canada

There are a couple of small powered Canadian stations which are very rarely heard here in Australia. The channel is 6160 kHz and there are two stations, at opposite ends of the Dominion in St Johns, Newfoundland and Vancouver, BC. There is a rare opportunity between 0800 and 0900 UTC before the Antigua relay of Deutsche Welle appears at 0900 UTC and dominates the frequency.

Higher Frequencies

The higher frequencies are coming into vogue again as the sunspot count increases. Radio Australia is back on 21740 kHz between 0100 and 0400 UTC. Transmissions are from Shepparton in Victoria.

Various Middle Eastern broadcasters are on 21630, 21700 and 21735 kHz around 0500 UTC, usually in Arabic. Israeli Radio is quite strong on 17635 kHz around 0400 UTC. Turkey is on both 17705 and 21715 kHz. ar

Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:-

H E	WHYTE	VK2AHA
K J	ELKINGTON	VK2CBI
N S	PIEREMONT	VK2CNS
G H (Gordon)	SANDERS	VK2DGS
P (Peter)	RYSDYK	VK2FFA
G (George)	FOWLER	VK3DOK
S A	KEIGHLEY	VK3DSP
J (John)	GORDON	VK3EUX
A R (Alexander)	ANDERSON	VK5GM
C C (Cyril)	EAKINS	VK6CN
T H (Thomas)	PRICE	VK6TP

Kenneth John Elkington VK2CBI - 1931 to 1998

Born to Eva (Conners) and Bill Elkington in Penrith on 15 August 1931, Ken was elder brother to Colin, Bruce and Neil. He attended St Joseph Convent School, Penrith, and later St Patricks at Strathfield. A good student, he was respected and well-liked by peers and teachers.

Ken had an early passion for carpentry, and excelled in woodwork, along with football, tennis, and rowing. He was a state champion between 1949 and 1951.

He loved playing golf, showing an occasional resemblance to a slightly more famous cousin, once removed. He enjoyed the friendship and company of the Springwood Golf Club extended family.

Ken began his building career with Rex Hardy in Penrith, before joining with Ernie Hockings for several years of building around NSW, including the Nambucca cinema and the Bega cheese factory.

He met and married Elsa (Brown) in 1959, and the Blue Mountains became home.

In partnership with Fred Parish they became known as the "church builders", and completed many magnificent homes, schools, post offices, shops, a bus depot, fire station, and numerous additions in the area.

Ken and Elsa became involved with the Blue Mountains Grammar School Auxiliary, attended by their four children, Mark, Paul, Julie and Angela.

He was a member and President of the Blue Mountains Master Builders Association, and was recognised through the award of a gold medal during that period.

He spent many years enjoying his holiday cottage at Forster. A keen fisherman, he would usually return home from either the lake or ocean with a respectable catch of bream, flathead, whiting, and yarns.

A quiet, gentle, family man, he will be greatly missed by his family and friends. "Well done, good and faithful servant."

Mrs Elsa Elkington

Neil Pieremont VK2CNS

Neil ("Froggy") Pieremont VK2CNS (previously VK2NQ) passed away on 27 May 1998, six weeks short of his 89th birthday. His health had been increasingly in sharp decline for about eight months, the last eight weeks in hospital and finally just two days in a nursing home.

In the Navy, Neil was a "Tingira" boy at the start of his service, 30 December 1924 to 21 July 1931. During that period he became a Telegraphist Air Gunner after training at Point Cook. With WW2 he rejoined on 27 November 1939 and was discharged on 12 December 1945, including two years at Darwin (Coonawarra W/T) and afterwards as Radar Instructor at HMAS Watson Head.

In civilian life he worked as station engineer for each of 2UE, 4LG, and 4AY before taking up employment at the Naval Dockyard Radio Centre at Leichhardt (moving later to Holt Street and to Garden Island), from which occupation he retired, aged 64, as a Senior Technical Officer.

A RNARS member and life member of CCARC, Neil lived in retirement on the NSW Central Coast at Pearl Beach, next at Ettalong, thence Buff Point. He enjoyed fishing, gardening, model boat building, amateur radio, ancient history and the Bible, plus many other interests, and will be missed by all his peers.

H M (Max) Pieremont VK2APD

Gordon Sanders VK2DGS

Gordon Howard Sanders VK2DGS, is one of our genuine "Silent Keys", being a Morse and High Frequency addict for many years!

Gordon was born in Liverpool, New South Wales on 19 June 1921 and, whilst most of his working life was spent as an engineer with the Department of Civil Aviation, he spent some years with the Royal Australian Navy Signals charging to, and communicating from, many odd places of the globe.

First licensed as VK2NTS in 1977, other call-signs held were G4LCW, C31WW, RNARS number 1428, Royal Signals number 1483, and finally VK2DGS.

His other achievements included building his own house at West Lindfield and getting it passed by Council. Nothing, I guess, if one is in that game, but Gordon was not! Also, after retirement from DCA, he taught Maths and Science at High Schools. This came to a halt in 1989 with a total of six heart by-passes after which he continued to help others for some years in the Hydrotherapy Pool at Royal North Shore Hospital.

Gordon passed away on Monday, 15 June 1998, after some years of failing health, years which involved three visits a week to the Royal North Shore Hospital for dialysis. He is survived by his wife, Marge, and two daughters, Helen and Robyn.

Bob Yorston VK2CAN

ar

VI3RMIT Special Event Station

The Royal Melbourne Institute of Technology is once again opening its doors to the general public for the annual event of Open Day.

On 9 August 1998, students studying with the department of Communication and Electronic Engineering at RMIT will operate a special event station to signify the importance of communications and promote the hobby of amateur radio.

OPEN DAY 98 is being organised by the final year students of RMIT and should bring over 4000 people into their departments. You are invited to participate by listening and calling for VI3RMIT on 14.200 MHz +/-20 kHz, 21.200 MHz +/-20 kHz, and 28.425 MHz +/-20 kHz.

Listen between 23.30 and 06.30 UTC, 8 through 9 August, or 9.30 - 4.30 EST on 9 August for those in VK.

The Special Event Station Manager is Agisilaos Politis VK3MLA, and the Head of Department is Prof Allan Bradley VK3LW.

For further information contact Chris Arthur VK3JEG, Chief Technical Officer Comms Group, Comm and Elec Eng, RMIT, on 03 9925 2460, fax 03 9662 1060, or rmmca@minyos.its.rmit.edu.au.

ar

**WIA Call Book 99
Coming soon!**

Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator
Freapost No 4, Rubyvale QLD 4702
Tel: 07 4965 4168
Packet: VK4KAL@VK4UN-1

impossibility of removing some intruders can be overcome if we worry at them long enough. Which is why 'it takes a little longer' and it is this time factor that may discourage those who have consistently supplied reports of an intruder but have seen no apparent result.

"But if you check the Intruder Watch column in Amateur Radio of last June, you will find some encouragement in the first paragraph. This didn't just happen. Someone, many someones, must have been reporting these intruders.

"To improve the effectiveness of reporting intruders, our Federal Co-ordinator Gordon VK4KAL is instigating the system of Primary and Secondary observations. In this system we concentrate on a few Primary intruders with greater intensity in logging times, duration and direction of their transmissions, noting modes and possible identification.

"Other Secondary intruders are noted with a view to moving them to a Primary classification if they prove to be persistent. Now all we need are more willing observers, even just a few. Believe me you will be most welcome and I'll be more than happy to supply all the details."

Thanks, Tom. Incidentally, the last couple of lines apply to me also!

Education Notes

Brenda M Edmonds VK3KT

Federal Education Co-ordinator
PO Box 445, Blackburn VIC 3130

The following small item originated from Tom Walker VK4BTW, the VK4 Intruder Watch Co-ordinator. I thought it worth including.

"It has reputedly been said by some engineering body or other: 'The difficult we achieve immediately, the impossible may take a little longer'.

"While Intruder Watching could not be considered difficult by the average radio amateur, the main difficulty seems to be to convince enough people that the apparent

I have written a number of times about ways to introduce amateur radio into the schools, and have mentioned the idea of ARDF being a possible route. Recently I have discussed this possibility with a number of active ARDFers, and am almost ready to circulate an information package to some schools on a trial basis.

Several clubs and groups have developed an interest in ARDF, to the extent that they are building the necessary equipment and running contests on a regular basis. Some have indicated that they would be prepared to lend a set of equipment to a school as required, but we come to a problem when seeking a licensed operator to be responsible for the transmissions.

I would dearly like to be able to go into a school and sell this type of activity by saying "In this area there are X operators who are prepared to devote a few hours per week to help you get started". Obviously a fair amount of co-ordination will be required, and also a lot of volunteer effort. I will be happy to try to do the co-ordination if there are volunteers to co-ordinate.

Some of the outer-Melbourne clubs have agreed to accept requests for assistance from schools. Of course, the main problem is that schools need help during normal working hours, and few amateurs have free time during those hours.

If there are retirees or part time workers who are available for a half day a week, I would be delighted to hear from you.

On another topic, I have recently renewed contact with Pakistan through a local amateur and the Principal of one of the schools. Since we last met, the school has established a station and has included amateur radio in the curriculum.

I am assured that it is well received and the students are working towards licences. Unfortunately, I neglected to get the call sign of the school station, so will have to give it to you in a future column.

A summary of intruders logged during June 1998

FREQ	DATE	UTC	EMM	DETAILS
3.540	220698	1210	A3E	UiBC Indonesia. QTH Sumba Is
3.559	2106	1230	A3E	UiBC, suspect R of Korea, Eng
3.560	1806	1102	A3E	Radio Korea, Pyongyang, Poss ID
7.0392	2406	1227	A1A	BCN "F" Ch Mark, Vladivostok, CIS
7.0395	1806	1040	A1A	SLB "F & S" CIS Navigational
7.100	1906	0600>	N0N	UiCAR, more listening on this
10.1315	1906	0500	N0N	UiCAR, sum F1B, nil Sh/Bd rate
14.1265	3006	dly	F7B	UiMUX, 230h/144bds 3ch rev/pt
14.2115	3006	0637	F1B	UiVFT, 850h/100bds, M&S tones
14.250	2306	2000	A3E	Voice of Russia, H2/7.125
14.330	1906	0508	A3E	Radio Australia, H 2 of 7.165
21.159	2006	0525	A1A	P7A Calls P8M, sh to 21.163

Relaxing Morse Code Requirements - More From the RSGB

In the last issue of *Amateur Radio*, you will have seen that the Radio Society of Great Britain was championing a cause for a five words per minute entry level to the HF bands.

According to the latest from the RSGB, a statement has been made saying "Morse has many advantages, including spectrum utilisation, relative simplicity of equipment and cost. The society (RSGB) wishes to see Morse (and Morse segments of the HF bands) preserved as core elements of

amateur radio globally. However, Morse is but one mode among many in current use, and it should take its place alongside the others as an equal".

This statement is basically a response by RSGB President Ian Lyle G18AYZ, who is a proponent of the mode of CW. The comment was added to a statement from the RSGB several weeks ago on a reduction of entry level Morse code to HF frequencies. Albeit, that the reduced code level would be restricted to amateurs in the UK. ar

VHF/UHF

An Expanding World

Eric Jamleson VK5LP

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All times are UTC

Andy Thomas VK5MIR

Peter Ellis VK1KEP reports the following: "I created something of a media story here in Canberra after I talked to Andy VK5MIR on Saturday morning 5/6 at about 5.40 am local (1938-1947 UTC).

"Andy said I was the first VK1 he'd talked to. I decided to see whether amateur radio could make a story on a slow-news long-weekend and made up a news release and sent it to several radio, TV, and print outlets. Nothing happened on Sunday, except for putting the tape of the conversation on the local Amateur Radio Club weekly broadcast.

"Then in quick succession, on the public holiday, Monday 6/6: I was interviewed by the local station of the National Broadcast Network, station 2CN.666 AM, ABC - Australian Broadcasting Corporation, for five minutes just before their 9 am news, including a play over the phone of some of my taped conversation with Andy.

"I was contacted by the Canberra Times for an article and photo. The article was on page 1, and ABOVE the fold!

"As a result of that, a local commercial radio station MIX 106.3 FM, did an interview for about three minutes leading off after the 7 am news. I managed to get a mention in of the AMSAT web site, so it might get a few hits as a result.

"Late news: I've been called for a TV interview with a local commercial station for the evening news!

"So, the lesson is to have a quirky news story on a slow news day and put out a release. Amateur radio got some good publicity, for which I am glad. That was the point.

"And ... Thanks Andy, for a great conversation. Goodonya, mate. (Decode of Aussie-speak: Good on you mate. Thanks, friend.)"

In response to the above, **Chris VK6BIK** e-mailed: "Very well done indeed Peter! I just heard (at about 6.35 am local) your story and recording on the ABC radio morning news

program. They gave your story a real fair go with what seemed like 8 - 10 minutes of prime air time after the news, and the announcer's genuine interest was obvious. Well done also on the plug for amateur satellites, and amateur clubs in general. I liked your description of the term "amateur" only referring to the amount of fun we have!

"I had no idea the ACT (almost) missed out on all the fun - we did pretty well in VK6, since the passes mainly came up over the SW first - for once on VHF, an advantage to be living in the Far West. Good work and thanks for the superb positive exposure."

Yes, it's good to see amateur radio being recognised as such in media outlets. So often we are referred to as CBers because those concerned never bother to discover the difference. Thanks, Peter.

Six Metres

Steve VK3OT reports six metres has been very quiet: "On 2/6 I had the JA2IGY beacon for several hours but despite many calls was unable to raise any contacts. I also had VK8VF/b from Darwin at the same time. JAs have been very elusive.

"Apart from that, and the ZL3SIX beacon a few weeks later, I have had no E. layer of any significance.

"By comparison, had I been in KL7I would have made many 3500 mile QSOs, according to Steve KL7FZ, who has been working down into the US states.

"On 4/7 I spoke with Phil YB9/YB0ARA and he is up and running on six with high power and should be a contender into VK in December."

Mike ZL3TIC reports a short six metre opening on 11/6: 0430: 45.240,250,260, 55.240,250,260 5/9+, also 55.250 American Samoa 5/9+ NTSC; 0523: ZL2AGI 5/5 w/ QSB; 0530: ZL2TPY 5/9; 0535: ZL1WTT 5/9 running 1/4 wave vertical and 551; 0540: 49.750 5/8; 0540: 46.170,240 57.250 5/9; 0540: VK7RAE/b 5/9. No VKs worked.

UK and Europe

Ted Collins G4UPS, in his report for May, says: "The first really widespread and intense Es opening took place on 29/5 in the morning to 4X11F, and later I worked 23 different countries including SV9, ZB, 5B4, RA6 and EH9.

"Since 1/1/98 I have worked 39 different countries on six metres, which is below the number for the same time last year.

"Although I have worked 39 different countries, I have in fact heard 48 countries, including CT1, V51, TT8, OY9, GU, GJ, UY and Z32."

In response to my suggestion that it appeared the Northern Hemisphere was going well with Es contacts, **Geoff GJ4ICD** said

they were having fun. A total of 71 countries so far in 1998 including 3C5I.

"4/6: 0830: Band open again to Middle East: OD5RAK/5B4/EU1AA into G/GJ. 1130: KP4EIT and WP4O worked CT1DNF. KP4EIT also worked OZ station and another CT station ... Ed W4PO. 1242: VE1PZ worked CT1CAD. 1400: KP4EIT into G4UPS/G3KOX/GJ/GU. 1800: Short skip GJ to EI 600 km. 2000: Fs in. F2 plus Es brought PY5CC into I/GJ/SM/OK/DL/F/ON/PA.

"GJ7SLU. and I heard him S6 working F6HRP/IN88. Peter PY5CC worked 50 stations in Europe. Best DX today goes to Max DL4MDQ to PY5CC at 10,500 km via Es on top end of F2."

Geoff GJ4ICD also reports in Six News that: "7/6 was probably one of the best Es days ever on six in Europe; conditions were fantastic for the contest during the weekend (some stations had over 750 QSOs!). Alan 3C5I reports adding six new countries as far as Moldova. Early today saw an opening from G/GJ to TR8CA/TR8XX, with TR8CA S9+ on 'SSB into GJ4ICD at 0756: 9G/TR8 on 'SSB was then into G3WOS/MD8V, 3C5I also into ON/OZ shortly after.

"So much DX was heard today - here are the highlights. Reported in to G/GJ were: EK6AD to G3IBI (hrd), 0800: TR8XX to G0JHC/IO83 (wkd with 100 W and a total Es path), LZ1KWT/KN32, 5B4, LZs galore!, TR8s, 9G1BJ, YL, EH9, PM; OZ1DJJ to 3C5I, ER3R/KN47, lots of ERs, loads of YOs, OD5RAK/S9+ into GJ/G1IOV etc. 1515: 3C video (48.250.4 zero beat USB) into GJ4ICD (UK alerted); 1644: 3C5I/JJ43 559 into GJ4ICD and country #163; 1800 3C video gone, but EH9IB and 9G into GJ/F; 5B4CY (50.498 MHz) heard most of day in GJ/G."

New Beacon Band

A new Slovenian Beacon Band on 40.660 to 40.700 MHz came on air as of 13 June. The beacons must use narrow-band FSK, with a power limit of 10 dBW ERP. This, by the way, is part of an IARU Region 1 initiative to obtain spectrum at 40 MHz for DX beacons as an aid to propagation investigation. This information was supplied by David G4ASR via Six News on The Internet.

Cycle Update from ARLP/ARRL

Dr Dick Altrock of the USAF released a statement in conjunction with the National Solar Observatory about the peak of this solar cycle. He is looking at long-term variation of solar emission features that move toward the solar poles prior to solar c maximum. Since this emission feature already appeared over a year ago at 55 degrees north latitude, and is continuing to move toward the poles, the solar

maximum earlier believed to be stated for 2000 is now predicted for next year.

[Reprinted from the ARLP/ARRL Propagation Bulletin and forwarded by Scott VK4JSR.]

Letters

A letter came from Ray VK4BLK (ex VK3LK) who now lives at Yeppoon in North Queensland. I overlooked the letter last month but the news is still relevant.

Ray sent a 50 MHz band report for April 1998 as follows: 11/4: 0951-1044 JAs and JD1 Minami Torishima. 12/4: 0000-0256 35 MHz pagers from USA; KH6HME/b and KH6HI/b. 13/4: 0311-0412 KH6VP, KH7R, KH6AFS, WH6BY, KH6YK, KH6RM, 0655-1026 JAs and Okinawa. 14/4: 0324 JA8; 0953-0957 JAs. 15/4: 0351-0407 and 1006-1025 JAs. 18/4: 0930 JAs. 19/4: 0730 JA2IGY/b. 20/4: 0652-0658 JAs; 0726 N9KX/KH4 Midway Is; 0737-1130 JAs. 24/4: 2328-2352 FO5DR/b 559.

Ray says he has now settled in at Yeppoon and hopes to send regular 50 MHz reports. Thanks Ray.

Wally VK4DO from Proserpine also sent a letter with an equinox report, on 6/5, which I missed (I must be getting old!) and he asks for a correction to page 42 May *Amateur Radio* - KH7R was on Hawaii not Kure Island - KH7 stations are now appearing in Hawaii.

Wally reports: "Two of the strong TV stations on 49.750 MHz are from Vladivostok, USSR and Harbin in China. They both have spurious signals on 50.110 MHz and now I am able to tell which one is there if only one carrier is on 49.750. On two occasions this year I have had a noise free picture from each station for a period of one or two minutes, always around 0500. In both cases I was able to read clearly the Cyrillic script or the Chinese characters.

"Japanese stations are by far the most on the air, but HL1LTC and KF4GMH/HL were there on many occasions. Others worked were FK1TK, P29KFS, V73AT, 7J6CCU Okinawa, KH7R and YJ8UU. Heard a VR2 under a pile of JAs on 50.110 and, on 29/3 at 0530, NH2C on CW."

"The first opening here was on 14/2 at 0533 to JAIVOK. Since then the band has been open every day. It was only type 1 TEP at first, but this changed to types 1 and 2 on 19/3. Since then there has been more type 2 TEP. The peak ranges around 0500 but can start from 0130 and last until 1200.

"Ten metres over the equinox gave more openings into the Caribbean area as well as Florida. Some confusion erupted after having a contact on an FM repeater in Florida. After the contact I left two amateurs arguing as to whether I came direct or through The Internet!"

The VK6 Report

Wally VK6KZ reports a generally quiet month, the usual for mid-winter: "Al Edgar VK6ZAY has moved QTH to a much better take-off for microwaves. He has worked a number of the Perth stations on 2.4 GHz, also Terry Grummer VK6TRG and Wally Howse VK6KZ on 3.5 and 5.7 GHz, plus VK6KZ on 10 GHz. The paths are all short ones of less than 10 km.

"A number of VHFers have been overseas - Alan Woods VK6ZWZ, Jack Borthen VK6KDX and Terry Grummer VK6TRG went to Europe and Phil Casper VK6ZKO went to the USA. Alan gave an interesting insight into the Rutherford-Appleton Laboratories Microwave Round Table in the UK. One of the talks about research going on at those labs referred to the use of 20-60 GHz as IF frequencies! Phil is to talk to the WA VHF Group about the Dayton Hamfest and his visit to see the Phase III team.

"The 144.120 MHz skeds between Perth/Albany and Esperance continue each weekday morning at 2315-2345 with signals always being detectable. Wally Green VK6WG has two stacked long Yagis which have improved his signal dramatically. He has now received his 600 mm dish and is using it for his 5.7 GHz station.

"The 50 MHz band has been tantalising with some TV carriers both from the north and the east being heard from time to time but no amateur signals.

"The WA VHF Group scramble on 21 June provided some intense activity on bands between 50 and 1296 MHz for a 30 minute period. Alan Woods VK6ZWZ was the winner. A Field Day is planned for September and will focus on the use of simplex FM for long distance contacts, and is intended to encourage greater interest in non-repeater contacts and perhaps lead to more SSB interest."

EME

A further communiqué from **Allan VK4KAZ** advises that he has not had a great deal of joy on the EME front lately with only another two to add to the list. On 17/5 he worked K5JL (O/M) #6 and on 22/5, W7CNK (M/M) for #7 off the moon. There have been half-a-dozen other skeds but these have been unsuccessful due to a variety of factors, bad weather, blown pre-amps (their end), poor conditions and 'no shows'.

Allan says: "My Yagis are K1FO 22 elements, soon to become 24 elements. The 24 has better rear lobe suppression than the 22, I'm hoping for a better G/T ratio. Incidentally, the Yagis are homebrew but not by myself. A couple of years back I purchased Clive VK2DND's EME system consisting of Yagis and K2R1W amplifier.

"The pre-amp is homebrew also. A single stage MGF1302 GaAs FET. This is the area in most need of upgrading. The station mentioned above, W7CNK, is a four Yagi station, 4 x FO33. Now, if he copied me as well as I copied him and he's running 10 dB more power ... need I say more?"

"I've started building a two stage pre-amp with a HEMT front-end followed by a MGF1302 post-amp. Hopefully this will make a big improvement.

"Speaking of which, Trevor VK4AFL, about 20 km from me, had his first EME QSO on 3/6 with Frank NC1I. Trevor has a slightly larger system than mine, 4 x DL6WU 28 element Yagis and 100 watts."

Going Back in Time

Alan VK3AL from South Melbourne wrote me an interesting letter and sent copies of an article he published in the August and September 1959 issues of *Amateur Radio* with the title *Tropospheric Propagation at VHF*.

This was prompted by the interesting article published by John Martin VK3KWA in *Amateur Radio* for January 1998, concerning Ross Hull and his important discovery in 1935 that the bending of VHF signals was related to the lapse rate of temperature and moisture content.

Alan's article is well researched and written, and relates to work he did about 40 years ago in correlating temperature inversion and moisture gradient (as given by radiosonde readings obtained from the Meteorological Bureau) with enhanced propagation in south east Australia. He says: "To my knowledge this is the only published work of this nature covering conditions in Australia."

Alan says that things have moved on since the article was written and the concept of what constitutes DX has changed, but the same principles apply. I recommend the article for reading if you can locate it.

In the letter Alan also says that: "On the two metre band in the 1950s advanced stations were running about 60 watts plate modulated AM to an 829B or a QQE06/40 and a five over five Yagi antenna. All crystal controlled, of course, and everyone had his 'own' frequency. Receivers were mostly converters with 6J6 cascade RF amplifiers. With the influx of Z calls activity was high - higher than today in fact."

Alan tries to be active on 144, 432 and 1296 MHz on the low end of each band, when time permits.

The One Metre Days

I received an interesting letter from **Malcolm Haskard VK5BA**, in response to my 1997 series on *Six Metres 50 years ago*. Thanks for writing Malcolm.

In the 1950s Malcolm worked on one, five and six metres and sent me copies of early log book pages. On five and six metres he used a crystal controlled 6V6 oscillator driving push-pull 807s with a 6F6 push-pull modulator, preceded by two 6J7 stages.

The modulation transformer was a 240 volt to 385 volt centre tapped secondary mains transformer used in reverse. A crystal microphone was used. The receiver was a crystal controlled converter with RL18 grounded grid RF amplifier, 6AK5 converter into an AMR-300 Navy communications receiver.

The converter HT was switched to operate the aerial change over relay. The antenna was a three element beam on a length of water pipe.

The one metre gear was the usual self oscillating triodes with lecher lines. The valves were not 7193s but types of similar construction having higher power - he could not recall their numbers but they ran with 12 watts input. The same modulator was used. Receiver was a 955 super-regen into a 6C5 and then 6V6 output. Antenna was a 12 element array mounted on the same water pipe above the 5/6 metre beam.

Most one metre activity was in 1957/58 with call signs noted in the log: VK5s BI, ES, FP/p, FT, FZ, JI, JR, JS, KY, OL, QZ, UA, ZAL, ZAN, ZAQ, ZBH, ZBI, ZBM, ZBN, ZBR, ZBX, ZBY, ZBZ, ZCD, ZCR, ZCX, ZCZ, ZDF, ZDH, ZDO, ZDS, ZDU, ZDX, ZGA, ZGK, ZGS, ZI, ZK, ZOA, ZT, ZXL. These will bring back memories to the OTs. It's interesting to note the high number of Z calls, many of whom were responsible for hastening the opening up of the various VHF bands throughout the 1960s. Being limited to those bands, they used their skills to build equipment and populate the bands.

Stuck deep in the Adelaide Hills I (VK5LP) didn't work any of those stations with my one metre gear, spending my time with a few close-by stations.

Using Weather Charts to Predict Propagation

Russell VK3ZQB, with some concern, has sent the following information: "All the AXM charts have a reference at the top of the picture, to read their special notice. The MET may cease transmissions of AXM and AXI in the next few years. This service is the only free-to-air weather fax broadcast that we have available to us. If they close the service then we will have to pay for the information from Infifax or as a registered user of the MET's Web site.

"I have written to the MET to put my reasons for the MET to consider continuing the service and I urge all amateurs to do the same. Without the MET service we will find

it extremely hard to get information that will allow us to predict tropospheric propagation.

I am interested in any comments.

"The questionnaire can be found on the Web site <www.bom.gov.au> under AXM schedule."

Here is a copy of the questionnaire:

Australian Radio Facsimile - Future of AXM and AXI Services

The AXM/AXI Services

The Bureau of Meteorology has for many years been providing the marine community with weather information in the form of charts broadcast via its AXM/AXI radiofacsimile services. The radio transmitters for AXM and AXI are operated by the Royal Australian Navy.

The Future

The Navy is developing its radio broadcast systems, and is planning to commission a new communications facility in the next few years. HF radio transmissions for the purpose of AXM/AXI are not currently included in plans for the new defence communications facilities.

This Survey - Your Input Highly Valued

This survey will help the Bureau of Meteorology assess how you use the AXM/AXI radiofacsimile services and the impact for you and your activities if they ceased at some future stage. Please take the time to fill in your responses to our questions following. Your input will be an important factor shaping the future of Australian marine weather services to shipping and other activities taking place on the high seas.

Q1. Please provide your name, office/rank, name of company/vessel, and address.

Q2. What class of user are you? (merchant ship/fishing vessel/transport/yacht/hobby/other.)

Q3. What routes/regions do you operate in, or, what country/state/province/city do you operate from?

Q4. What AXM/AXI charts are of most importance to your activities?

Q5. Do you use other marine radio services, eg VHF, HF voice, for your activities? Please specify.

Q6. Do you have Satcoms available, eg Inmarsat A, B, C, M? Please specify.

Q7. If AXM/AXI services are no longer available to you, what alternative means for obtaining weather charts would you use?

Q8. Overall, please describe the impact of the service ceasing.

Please send your survey responses no later than 31 December 1998 marked for attention of SRRT, to the Bureau of Meteorology by either of the following methods:

Mail: SRRT, National Meteorological Operations Centre, Bureau of Meteorology, GPO Box 1298K, Melbourne Victoria 3001.
Fax: 03 9662 1223.

Unless you download the information yourself, you will need to copy the above questions and attach your answers in your submission.

Those interested in long distance VHF/UHF propagation are urged to respond - if you leave it until later you will forget!

ACA Discussion Paper on Proposed Spectrum Sale of 3.410-3.600 GHz

David VK5KK advises that it is worthwhile reading about the latest threat to the 3.4 GHz band due to a proposed spectrum sale:

"Please read the ACA's latest <http://203.37.2.230/3_4GHz/lastpap.pdf> of 25 pages examining the possible auction of this segment, over and above the existing WLL services that Telstra has in place in ALL States.

"At least the WLL services straddle our narrow-band segment with a satisfactory guard band.

"The situation with this band is not good. Internationally, Region 1 has lost part/all of the band already. Australian usage is minimal, like a lot of our microwave bands. I know that 3 GHz is perhaps used for ATV repeater linking in VK2 (comments please). Other than that about half a dozen VK3, 5, 6s use the narrow band segment along the Southern Bight tropo path and we have one beacon, VK5VF. We have till 24/7/98 to submit comments."

Beacons

Wally VK6KZ reports the Albany two metre beacon is off air with Aub VK6XY and Tom VK6TR looking for a new site for it: "The Augusta beacons are ready but waiting for a site. I have written to local government and hope to have an answer soon."

Closure

As is evident from these notes, activity has assumed its winter all time low. Two metres from VK5 seldom extends beyond 400 km and six metres has gone quiet. It should improve at the next equinox.

There is quite a degree of construction activity for equipment on the microwave bands 2.3, 3.5, 5.6 and 10 GHz, and now a few are looking at 24 GHz.

Closing with two thoughts for the month:

1. At a dinner party we should eat wisely, but not too well, and talk well, but not too wisely; and

2. It might be a good idea if the various countries of the world would occasionally swap history books, just to see what other people are doing with the same facts.

73 from The Voice by the Lake

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Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Initiatives for the Environment

Our Editor's "Repair or Recycle" editorial in the June issue of *Amateur Radio* aroused my interest. The headline, "Initiatives for the Environment" is from an in-house brochure published by, and for, the largest electrical, and one of the largest industrial, firms in the world.

So perhaps there is a glimmer of hope to so many of us, like Editor Bill, who wonder how the increasing number of scrapped TVs, autos, toasters, PCs, etc will affect our environment.

Have you thought about it?

The German firm Siemens has accepted the problem and their part in solving it, and is taking very positive steps to alleviate waste at the risk of pricing itself out of the market.

Briefly, it all starts with product development and design, and company regulations apply to design, production, use, disposal and recycling. All this applies to power plants, transmission and distribution systems, transportation, domestic equipment, communications, and brings in air, water and soil quality maintenance.

Examples are a completely recyclable telephone, halogen free plastic PC boards, combined-cycle power plants, etc.

In this firm, each production facility has its environmental protection officer to guide and assist in good practice, but every employee is involved. We wonder how many firms in this dollar-chasing world are giving any consideration to the effects of their products on the environment?

Peter Brown VK4PJ
16 Bede Street
Balmoral QLD 4171

MIR Success

Congratulations and thank you for the fine front page of the June issue. This excellent photo of our fellow amateurs in action is the type of thing we like to see. Also, we appreciate the articles on the MIR project.

It was a real event. Andy was a great guy

to talk to. I had spoken to him six times, once when mobile, and also once handheld. He was quite interested that I was out in the field looking after a young cow with a new calf.

One thing Andy always wanted to know, is what the media were telling us. I was able to tell him of the excellent video clips he had made, and also of an article in our magazine including the fine photo of himself.

I had also been invited to our local ABC regional radio studio, where the announcer interviewed me and made a six minute recording including a few words from Andy that I had recorded. It was put to air on the breakfast session.

Some six other VK6s contacted Andy, some more than once, so we in VK6 have done our bit toward this historic event.

One thing I must point out, however, is in regard to the MIR footprint. In fact, it actually covers far more than Melbourne to Ceduna. At the right moment it will mostly encircle the whole of Australia. So you see that Ceduna is not the westernmost point of Australia at all!

So many times we in VK6 have heard Andy talking to the rest of Australia, as far as VK2, and on the PMS we see VK5s (VK5ZAI) and VK3s, VK2s, etc.

In previous times I recall seeing MIR responding to Maggie VK3CFI on uplink. In fact, I was able to "beacon" my greetings to this illustrious lady, something we mustn't do these days!

Frank Kratochvill VK6DM
RMB 9021
South Coast Highway
Albany WA 6330

Club for Morse Users

While most amateur radio organisations and clubs report dwindling membership, the FISTS club continues to grow steadily. FISTS is an international club for those who favour CW as a mode to be preserved and encouraged.

The highest proportion of members is in Great Britain and North America with only a sprinkling in Australia and New Zealand. Impediments to down-under membership are the need to send the ten pounds subscription to England and the need to distribute the newsletter from there.

It has been agreed that the membership could be administered and the newsletter

Update

Corrections to previous issues of Amateur Radio magazine

The DSB40 - A 40 Metre DSB Transmitter

(published on pages 9 - 11 05 *Amateur Radio*, July 1998)

Peter Parker VK1PK, the author of this article, has pointed out the following amendments which need to be made to the published article:

1. The primary of the T50-2 toroid in the 2N2222 collector circuit should have 15 turns and not 13 as shown in the text (the last paragraph in column three on page 10).

2. The trimmer capacitor connected to the collector of the 2N2222 should be "40-250p", not "40-25p" as shown in Fig 1.

3. A 1 μ F tantalum capacitor should be wired between pin 1 of the NE602 and earth.

4. The capacitor between pins 2 and 6 of the 741 should be "2.2" nF and not "22 nF", as shown in Fig 1.

5. The positive end of the 10 μ F capacitor should connect to pin 3 of the 741.

It might be a good idea to correct your copy of the July 1998 issue of *Amateur Radio* now.

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printed and distributed locally. This means that it has been possible to reduce the subscription significantly.

I would be pleased to hear from WIA members who would like to join FISTS. I can be contacted at my Call Book address, by phone 64 4 473 0847, fax 64 4 473 0848, or by e-mail at sir_lancelot@compuserve.com. I will reply to all enquiries promptly.

Ralph Sutton ZL2AOH
12c Herbert Gardens
186 The Terrace
Wellington NZ 6001

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World Amateur Radio Day

This rather auspicious occasion is set down to be celebrated on 19 September 1998 with the theme 'Communicating World-wide for Three Quarters of a Century'.

This is in honour of the first two-way transoceanic amateur radio contact made on 27 November 1923 between a French station 8AD and American stations 1XAM and 1MO.

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WIA Divisions News

VK2 Notes

Affiliated Clubs Conference

The Conference of Clubs held on Saturday, 13 June at Amateur Radio House, Parramatta, was again a huge success with wide-ranging concerns, ideas and suggestions freely discussed by all the delegates.

Last year, a Club Delegate had laughingly complained that because the toilets were located on the ground floor some inconvenience was experienced when a comfort stop was necessary. The complaint was noted and subsequently discussed by the Directors whilst finalising conference details. It was felt that the complaint was too frivolous to warrant major building alterations to provide an upstairs loo but that in the spirit of the complaint something should be done. Vice-President Brian VK2WBK, who works for Tamworth Council, suggested that he may be able to borrow a portable loo. However, Council decided that a portable loo clearly labelled "Tamworth City Council" standing in the corner of the conference room was unlikely to fit in with the decor and the idea was dismissed. The Treasurer Eric VK2KUR said that whilst he appreciated that something should be done he was totally against any major expenditure. A number of other suggestions were made, none of which can be repeated in this column (some even physically impossible!!!) and it was finally left to the Secretary to try to resolve the dilemma - albeit at minimum cost!

Therefore, before the conference was officially opened by President Michael Corbin VK2YC, Eric VK2EFY, the Division Secretary, explained to the meeting the deliberations which had taken place. He then presented to delegate Brian VK2UBF, (having due regard to Council's "minimum cost" directive) a 'porta-potty' (plastic bucket) and a roll of toilet paper - much to the delight and applause of everyone present. Brian, when accepting this 'generous' gesture by Council, said that it was available for use by other delegates during the conference providing a suitable location could be found.

When the laughter had subsided Michael officially opened the Conference and the formal agenda began with the introduction

of Members of Council. As each Councillor was introduced they gave a report to the meeting in respect of their areas of responsibility such as Administration, Finance, Membership, Education, Dural, etc and delegates could ask specific questions in respect of the portfolio. The delegates also introduced themselves and identified the Club they represented, many giving a brief description of the area covered and the size of the club.

A number of motions and discussion items had been submitted by some Clubs covering topics such as problems with Repeater applications; reduction of frequency spacing for repeaters from 25 kHz to 10 kHz; a better arrangement for reciprocal licensing similar to USA and NZ; the omission of information from the 1998 Call Book such as DXCC listings, WICEN information and also incorrect or incomplete information contained in the publication; the need to attract membership to the WIA, particularly young people; and the need for guidance from Council to assist Clubs in dealing with local publicity and the media. In each case the representative of the Club submitting the item gave a brief explanation to the Conference on the reasons behind the submission.

The Chairman reported that in a number of cases Council were already taking appropriate action. For example, David Thompson VK2NH was already in the process of drafting Publicity Guidelines and would shortly put them before Council for approval. It was also suggested, and endorsed by the meeting, that each Club should have a small supply of Membership Information kits to assist them to process any requests from possible

members. Eric VK2EFY, Secretary, said that copies would be sent out with the next Club postings.

After lunch Vince Cottuli VK2DVC, a Field Officer of the ACA, arrived to take part in the discussions and to answer questions pertaining to the ACA. Vince proved to be well informed, open and, with his Irish wit, very entertaining, quickly winning over any sceptics of the friendly relationship and spirit of mutual co-operation which has been established between the ACA and this Division.

The day was fully catered with lunch (sandwiches, etc) and evening dinner supplied by outside caterers; morning and afternoon tea, coffee and cold drinks were supplied by the office. As one delegate subsequently recorded in his report to his Club (he kindly sent a copy to the office) he gave one out of five for lunch (sandwiches, no matter how varied, he says, are boring) but he gave six out of five (yes six!) for the cooked dinner - high praise indeed!

The consensus of opinion by Club Delegates was "very useful and enjoyable, looking forward to the next one in November!"

Membership Drive - "New Member Prize"

After the break for lunch at the Club Conference, President Michael Corbin VK2YC was presented by WIA Member Les Bercich VK2MPZ with an ICOM 706 Mark 2 (value approx \$2400) which had been kindly donated jointly by Icom Australia and Les' own company Amateur Transceiver Radio Centre of Giraween (NSW). The unit will be the "New Member Prize" for the VK2



VK2 Division Membership Long Service Awards (l to r) N Gough VK2NG (65 years membership), W L Woolnough VK2CW (75 years), J G Cowan VK2ZG (64 years) and W C Hall VK2XT (67 years).

Division and will be drawn at the Annual General Meeting in April next year.

In accepting the donation Michael said that, whilst the initiative for the membership drive had been taken by Council, the grass-roots was at Club level. Everyone present was urged to promote the WIA within their own clubs and particularly to encourage new club members and those attending education classes to join the Institute.

Our sincere thanks to Icom Australia and Amateur Transceiver Radio Centre for this very generous donation.

Food for thought! If every club in NSW could persuade only three members to join (or rejoin) the WIA, the result would be more than a 10% increase in membership of this Division!

Please note that David Thompson VK2NH has relinquished his position as VK2 Notes Editor and, until further notice, items for inclusion should be forwarded to the Parramatta Office of the WIA NSW Division.
Eric Fossey VK2EFY

WIA Victoria News

Outwards QSL Bureau

The response so far to the changes in the operation of the Outwards QSL Bureau announced last month has been very positive. A number of members have commented that they see the reasoning behind the changes and are committed to doing their bit to make sure the free membership service continues.

An information sheet and QSL preferred prefix list was sent to each member, either as an insert in *Amateur Radio* magazine or direct mail to those members who do not subscribe to the magazine. It is also at www.tbsa.com.au/~wiavic the WIA Victoria Web site.

We are still experiencing problems of people automatically generating QSL cards for each contact, even if they've contacted the same station many times before.

For example, half a dozen cards were put in the Bureau recently for a series of contacts over a half hour period between two stations in metropolitan Melbourne. The same thing is happening with frequent interstate and overseas contacts, which only clogs up the bureau system.

Rumoured 70 cm Threat Checked

The WIA Victoria Chief Executive Officer, Barry Wilton VK3XV, has had discussions with the Australian Communications Authority (ACA) in Canberra and Melbourne regarding correspondence circulating concerning the possible use of the 70 cm band during the Sydney Olympics.

It was stated that 70 cm may be used during the Olympics in Sydney and, to a minor extent, in Melbourne in the year 2000.

Barry Wilton has received assurances there is unlikely to be any restriction on the amateur use of 70 cm in Victoria. Rumours suggesting that we may permanently lose part of that band to commercial interests were refuted totally.

Whilst a number of commercial operators have made no pretence about their desire to gain access to portion of the 70 cm band, WIA Victoria believes this to be unlikely in the near

Stop Press

WIA Policy Misreported

Erroneous and malicious information has been disseminated about the WIA policy in relation to the operating privileges for radio amateurs.

The facts are that the Australian Communications Authority had asked the WIA two months ago for comment as it was considering allowing Novice licensees the use of SSTV as an additional privilege.

A postal vote was sought on the matter, through the medium of a motion proposed by WIA Victoria that the WIA does not seek further privileges for Novices.

The supporting argument for the motion was that Novice privileges had been expanded over the past five years, eroding the relativity between Novice and AOCP, and that situation was providing very little incentive to upgrade.

The postal motion was carried, and it became WIA Federal policy. The WIA Federal Councillors during a recent telephone hook-up were advised of the outcome of the earlier postal vote, but the topic was not discussed further during the teleconference.

WIA Victoria is exploring options to give Unrestricted (full call) licensees improved operating conditions and privileges.

future as the Department of Defence has signified it has no intention of relinquishing the band as primary user in the near future.

Can You Help?

A researcher has approached WIA Victoria seeking help in locating friends of the late Brian Falkenberg 3FA, who operated in the 1930s out of a property "Bonnie Hills", near Byaduk.

In addition to an interest in radio, Mr Falkenberg was possibly one of Australia's first rocketry experimenters, most likely pre-

dating his involvement in amateur radio. It is hoped that he may have mentioned this to some of his radio friends, or someone reading this article could have some knowledge or seen a contemporary report on rocketry involving him.

His family, unfortunately, have no knowledge of his rocketry work. Kerrie Dougherty of the Powerhouse Museum is researching a paper on early Australian rocketry activities.

If you can assist the contact details are: Kerrie Dougherty, Curator of Space Technology, Powerhouse Museum, PO Box K346, Haymarket NSW 1238 (note that this unusual postcode is correct - it is a special one for the museum). Phone: 02 9217 0204 (8 am - 5 pm). Fax: 02 9217 0355. E-mail: kerried@pnm.gov.au.

Repeater Report

New equipment installed for the VK3RSG two metre repeater is currently suffering a 5 dB intermodulation problem with the locally co-sited FM community radio station.

Part of the problem is associated with the condition of the old tower on which the antennas are located. The Victorian Technical Advisory Committee is investigating options concerning the replacement of the tower and negotiations are proceeding.

The monthly broadcast from VK3BWI is now directing a two metre signal to the Mt Baw Baw repeater VK3RWG. However, the repeater receiver has a fault and repairs are being undertaken by the WIA Eastern Zone Amateur Radio Club.

There are also a number of difficulties with the antenna which was wrongly located on the tower by commercial riggers while they were working on another operator's installation.

Repair or relocation of the antenna is extremely difficult in the winter icy conditions and a commercial rigger must be used.

Unfortunately, also located on the tower is a pay TV service operated by Austar. This 24 hour service radiates a high level of energy and no-one is permitted to work on the tower, other than when Austar can reduce power to a safe level.

The commercial agreement which Austar has entered into with the Alpine Resorts Commission is that the reduction in power will only occur in the early morning hours between 3 and 5 am. How would you like to climb a tower, in the icy conditions, in the mid-winter darkness?

We may have to put up with this less-than-satisfactory antenna until the summer months.

FM92 70 cm Model Delay

WIA Victoria had anticipated it would have for sale a small number of Philips FM92 radios suitable for conversion to 70 cm.

However, the transaction has not been finalised and it is unlikely that these units will be available for some time.

Agility vs Band Plans

Earlier this year a group of radio amateurs began using a two metre frequency for local contacts. On a number of occasions their QSOs interfered with a repeater in Gippsland.

The incident is nothing new and, like other occasions, had resulted from the unwitting use of a VHF or UHF frequency - a situation that can be easily avoided by checking with the band plan.

With the recent increase in two metre activity due to the availability of Philips FM92 synthesised radios, there has been some operation on FM outside the band plan. These radios are not really different in terms of their frequency agility from commercially made amateur transceivers.

No matter what band you use it will have a band plan as part of the self regulatory ethos of our hobby. These plans are designed to facilitate orderly operation and reduce incompatibility problems between various modes and operating techniques.

The band plans are "gentlemen's agreements", but there is also an overriding obligation on radio amateurs not to use the spectrum to the detriment of other users.

Operating deliberately contrary to the band plans, or in ignorance of them for a prolonged period, has the potential to cause harmful interference and lessen the enjoyment of our hobby by others.

Jim Linton VK3PC

VK5 and VK8 Notes

Within the VK5 Division efforts have been made to communicate with members with a mixed degree of success. Weekly news broadcasts, packet radio notes, Divisional Journal, monthly meetings, and monthly magazine notes are provided. A certain amount of information is made available by way of the Internet.

It is recognised that many people do not have access to all of these facilities; however, we hope we are reaching most members.

I must say, though, that success in communications requires a "Two Way Street." That is, we still need to hear more from YOU.

Clubs' Conference

The recent Clubs' Conference seems to have been a reasonable success although it would have been advantageous if more clubs had provided representation. It has been suggested that a further event of this nature should be held in around another six months time.

Material resulting from the conference has yet to be examined by the Divisional Council and resultant decisions are yet to be made. It would be nice if a greater attendance at the next conference resulted from the efforts of those involved.

Such conferences are one way in which members' opinions can be gathered; however, it is certainly the case that the majority of members do not belong to their local clubs. So, here again the need is shown for some other way to be found to determine how you, the members, feel and what you want your organisation to do.

My reason for repetition of this point is that it is vitally important that proper and balanced representation be provided to the authorities on your behalf. The vocal "few" who do communicate with council do not necessarily represent your opinions and in fact their claims may be based on a very narrow view.

The only way to improve the situation is for your council to do as it has been doing and continually remind you that we need to hear from you. The council must be open and honest in its activities and also must not be seen as bowing to pressure groups of any kind or become over influenced by seemingly strong and authoritative individuals. This council is certainly one of consensus.

Constitutional Review

I am hopeful that the intended revision of the Divisional Constitution may show a way to improve representation of members' views. Whether this will result is of course yet to be seen.

I have no immediate indication as to when the first draft of any proposed review will become available. Our intention is, as soon as possible, to allow members to view the drafts with the aim of obtaining as wide a spread of opinion and ideas as we can.

The MIR Connection

I have been attempting, by way of the Divisional News broadcasts, to keep you informed regarding various aspects, such as QSLing, resulting from Andy Thomas' operations from the Space Station under the call sign of VK5MIR. I hope the latest developments will be elsewhere in this issue.

Meeting Program

As at writing, the program for meetings beyond July has not been set. I would expect that this will be done following the coming Council meeting at which allocation of portfolios to the end of the Divisional year will be determined.

Burley Griffin Building

Quite some time has elapsed from the first indication given several years ago that our

continued occupancy of the Burley Griffin Building (BGB) as a Headquarters was in doubt.

The previous council had encountered severe difficulties in negotiations with Thebarton Corporation officers which undoubtedly placed them under considerable stress. Since then Local Government changes have taken place amalgamating councils, and the Thebarton Corporation no longer exists.

Approximately 12 months ago we were informed that the new authority, the West Torrens Council, intended to sell the Council Depot property in which the BGB is located. Ongoing discussion at a higher level with those concerned has been slow and, whilst amicable, has not shown any firm result. There has been some doubt as to whether the BGB would be included in any sale.

The wheels of bureaucracy invariably move slowly, but we hear that the process is still being followed through although no definite dates can be given as to any likely firm action. We are virtually still at the same position as existed 12 months or more ago. Discussion and negotiation has included both the National Trust and the (state) Department for Environment, Heritage and Aboriginal Affairs, Heritage Branch and will still continue.

The Mayor of the West Torrens Council, Mr George Robertson, OAM, JP, who has been most helpful, is most unfortunately suffering from severe ill health which almost precludes him from his continued participation in the ongoing discussions. We do offer our thanks to him for his interest in our activities and wish him well towards a recovery. Members will be kept informed as much as possible as to progress in the matter of our occupancy of the building.

Ian Hunt VK5QX

VK6 Notes

VHF Group FM Field Day

This four hour contest runs from 12.30 to 16.30 WST (0430 to 0830 UTC) on Sunday, 20 September, and is limited to the frequencies and modes available to Limited Novice operators, namely FM and packet operation on 2 m and 70 cm.

All grades of licence are encouraged to enter. This is a great chance for entry level stations to get the thrill of some 'long-haul' VHF and UHF work (ie other than through a repeater), and for higher grades of licence to encourage them.

Points are scored for two way contacts between pairs of stations, at least one of which must be in the VK6 call area. Fixed station to fixed station contacts are allowed; however,

cross-band contacts, contacts via repeaters, and contacts via third stations on packet, do NOT count towards the score (satellite contacts are ruled out by virtue of the frequencies available to Limited Novices).

The contest is divided into two intervals of two hours each. In each two hour interval, two stations may work each other for scoring contacts once on each band (2 m and 70 cm) using FM phone, and once on each band using packet. Each scoring contact is worth one point times the following multipliers:

Distance Multipliers

Distance multipliers are 20 km, 1; 40 km, 2; 60, 3; 80, 4; 100, 5; 120, 6; 140, 7; 160, 8; 180, 9; 200, 10; and 200+ km, 11.

Portable and Country Station Multipliers
A multiplier of two applies if the other station is portable, and/or a country station.

A portable station is one which is being operated away from the usual station address and which is not powered from AC mains. Mobile stations (including permanently mobile) count as portable, as does the VHF Group club station, VK6WH

A country station is one which is at least 60 km from the GPO Perth.

Novice Station Multiplier

Contacts with Limited Novice and Novice stations qualify for a four times multiplier.

The contest exchange will consist of a three digit serial number starting from 001 (to which an optional signal report may be prefixed) and the station location.

There are four sections of the contest, Novice Portable, Novice Fixed, Portable (non-Novice), and Fixed (non-Novice). The first two are open to NAOLCP and NAACP holders, and the other two to all other license holders plus VK6WH.

Group Operation

There is no section for club stations, but contacts with club stations count toward the score of individual amateurs entering any of the four sections. Groups of up to three amateurs may pool their equipment and operate from a single portable site under their own individual callsigns. The use of multiple callsigns by a single individual is not allowed.

LOGS must be sent by 28 September 1998 to: Contest Manager, WA VHF Group (Inc), PO Box 189, Applecross WA 6953.

The Contest Manager's decisions and interpretation of the rules are final.

I've paraphrased the rules for brevity; any errors are mine. Contact the VHF Group if you want an original copy of the rules.

Snippets from the WIA Council Meeting Minutes

It was agreed that the licence for the 28 MHz "conventional" beacon VK6RWA should be renewed and the service continued. This service complemented the international

beacon system. Keith VK6XH advised that favourable reports had been received by the Northern Corridor Radio Group who maintain the transmitter.

Will VK6UU advised he had recorded the VK6WIA Broadcast News as a digital RealAudio file on computer disk. This led to discussion of the possibility of placing such a recording on the Division's Home Page each week. A trial of the process will take place and the feasibility of a permanent service determined, providing an operator or operators can be found to handle the recording and uploading.

ACA had written to VK2 Division advising that two 12.5 kHz channels had been licensed temporarily to non-amateur organisations in the 70 cm band for purposes associated with the Olympic Games.

The postal motion put by VK3 that no further licence privileges would be sought for other than the unrestricted licence grade for three years, was passed. VK2, 3 and 4 voted for, VK6 against, with no votes recorded for other Divisions.

There had been a proposal for a new Liaison committee from VK1.

A request has been received from Kalgoorlie for replacement equipment for the Kalgoorlie and Kambalda repeaters which had been destroyed by a lightning strike (the Secretary was advised to inform Kalgoorlie of a source of FM92 units).

Keith VK6XH reported on progress with assistance to Jim VK6RU with the QSL Bureau. A backlog of unclaimed cards had been largely cleared by post. Some large bundles remained and Council agreed that postage costs for these would be borne by the Division. Neil VK6NE pointed out that members should be encouraged to use standard size and lightweight materials for cards to help keep postage costs down.

Keith VK6XH reported on the Whiteman Park Amateur Radio Centre project. Input had been received from seven clubs. Most did not see how they could contribute to or use the proposed facility.

However, the Northern Corridor Group were enthusiastically in favour, with the WA VHF Group suggesting that individual members might contribute physically to the project, although the Group was unable to promise financial resources.

Don VK6HK advises that the WIA meeting minutes are archived on VK6BBR in FBB DOS directory C:\WIAMINS\COUNCIL for the Council minutes, and in C:\WIAMINS\GENMEET for the General meetings (now defunct). They are uploaded on the Monday following their use for Broadcast following the Tuesday meeting if you can work that out! All this is subject to Don remembering to upload them.

There are Council and General meeting minutes there starting from early 1997. So far there has been no reaction to this 'service'. Is it worth the trouble?

The files are ASCII text and can be retrieved by going into FBBDOS on VK6BBR and downloading using the get <filename> command, or using REQDIR (for a file list) or REQFIL from a remote BBS. Use <? REQFIL> for the procedure.

The minutes are, of course, distributed also as a packet bulletin addressed to WIA@VKNET at the same time.

E-mail Distribution of VK6 Notes

Do you have Internet e-mail access? Would you like to receive VK6 Notes via e-mail, approximately three weeks prior to publication in *Amateur Radio*? If so, send me an e-mail registering your interest, to vk6kch@amsat.org

Chris Hill VK6KCH

"QRM" News — VK7 Notes

"QRM" - News from the Tasmanian Division

As I write, I have just returned from our Tasmanian Divisional council meeting in Launceston. It was a very good meeting with only a couple of southern Councillors sending apologies. These meetings are held every two months, rotating around the three branches. The next is on 12 September at the Penguin High School; all Councillors please note!

John Bates VK7RT was excited with news that he has arranged a visit by WIA members (limited numbers) to a US battleship scheduled to visit Hobart in early August. Quite a coup seeing that only four group visits are allowed. We've asked for details of any amateurs aboard so that we can really show Tasmanian hospitality.

Southern branch at present has eight students in their radio classes, and Morse classes for these should start anytime now.

WICEN in the South

This group of enthusiastic radio amateurs is experimenting with portable simplex and repeater stations in the very difficult Tasmanian mountainous terrain. We've got some very wobbly locations over here!

The recent Saxon Safari Tasmania car rally on 4 and 5 July, when the group had to provide the command network between headquarters and the special stage starts, proved that amateurs can deliver. Three cross-band portable repeaters were used. It was a credit to those 15 amateurs plus helpers who

braved the weather to get "top marks" from all the organisers.

Two metre and 70 cm Yagis with masts have been built and their next project is to install a portable UHF repeater and antenna at the Southern Branch Domain clubrooms to give better coverage for their Friday night WICEN Group net on 438.525 MHz. This good news is from Garry VK7JGD.

Membership

Our membership drive is still bringing new members in (we've got to give the girls in the Federal Office something to do!). We've still a way to go before catching up with Victoria, but we're trying.

We Are Challenging

This year the Tasmanian hams are absolutely dedicated to licking the daylight out of the hams on the island up north in the Remembrance Day Contest. By this statement we don't expect the northerners to just lay down and admit defeat before the Contest even starts. We just say "you are on notice - Tassie is going to win". It's up to you to prove us wrong.

The Social Side

On Wednesday, 8 July it was my pleasure to visit the Northern branch for a Chinese feast at a very fine restaurant. Great meal (good price too!), and wonderful fellowship with 27 hams and their families. Things are really buzzing around Tasmania.

Ron Churcher VK7RN

Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

Return Loss

I have the following comments about the article in *Technical Abstracts* by Gil Sones in the April edition of *Amateur Radio*, and the follow up by Lindsay Lawless in *Technical Correspondence* in the July edition.

I agree with Lindsay that the term Return Loss is not used much in the amateur literature but is commonly used in the professional radio arena, with regards to specifications and field measurements. The advantage of using Return Loss (RL) is that if a directional wattmeter is used that is calibrated in dBm (logarithmic power level referenced to 1 milliwatt) or dBw (logarithmic power level referenced to 1 watt) then RL is directly determined from a measurement of both reflected and incident power as in the following formula:-

$$RL = P_{in} - P_{ref}$$

For example, if $P_{in} = 100$ watts (+50 dBm) and $P_{ref} = 1$ watt (+30 dBm) then

$$RL = +50 - (+30) = 20 \text{ dB}$$

From the table provided in the original article this is $SWR = 1.22$.

I do not agree with Lindsay's statement "it is not 'a different way of expressing SWR'". As Lindsay rightfully points out, RL and SWR are both different ways of expressing p , the voltage reflection coefficient. From his formulas we have the following relationships:-

$$p = (SWR - 1)/(SWR + 1)$$

$$RL = -20 \log p$$

therefore $RL = -20 \log(SWR - 1)/(SWR + 1)$ and is obviously a different way of expressing SWR.

RL is not "the power taken by the load", but gives the ratio of reflected power to incident power, and hence one can deduce the ratio of absorbed power to incident power and calculate this if the incident power is known.

In the above example, where we measured an RL of 20, we know this represents 1% of incident power being reflected, therefore 99% of the power must be taken by the load. Therefore, with 100 watts of incident power, 99 watts are absorbed by the load.

$$p = 10 \text{ raised to the power } (-RL/20)$$

ie, $p = 0.1$, however p is the voltage reflection coefficient.

To get an equivalent power reflection coefficient this is squared to give 0.01 which is 1% when expressed as a percentage.

Lindsay's own definition of Return Loss says that when p is expressed in a logarithmic form it is called Return Loss, so this is not only known to Gil.

Lindsay's last paragraph is enlightening if we use the term RL as defined by Lindsay instead of p dB.

$$RL(\text{input}) = RL(\text{output}) + 2 \text{ loss}$$

For $P_{in} = 200$ watts (+53 dBm), cable loss = 3 dB, cable to ant RL = 20 dB.

$$RL(\text{tx}) = RL(\text{ant}) + 2x \text{ cable loss} = 20 + 2(3) = 26 \text{ dB}$$

This tells us that 200 watts leave the transmitter (+53 dBm), 100 watts reach the antenna (+50 dBm), 1 watt is reflected (+30 dBm), 99 watts (+49.96 dBm) are absorbed by the antenna, and 1/2 watt (+27 dBm) reaches the transmitter as reflected power.

By using Gil's table we can see that the SWR measured at the antenna = 1.22 and the SWR measured in the shack would be approx 1.1

Using this formula it is possible to measure the loss in a transmission line if the RL can be measured at both ends. By using an open or short at one end, then only the RL needs to be measured at the generator as the RL at the open/short is 0 and the simplified formula is derived:

$$\text{Loss} = RL/2.$$

Peter Reichelt, VK5APR
37 Collingwood Ave
Flinders Park SA 5025

WIA Call Book 99

Coming soon!

WIA QSL Bureaux

The official list of VK QSL Bureaux. All are Inwards and Outwards unless otherwise stated.

VK1	GPO Box 600, Canberra ACT 2601
VK2	PO Box 73, Teralba NSW 2284
VK3	40G Victory Blvd, Ashburton VIC 3147
VK4	GPO Box 638, Brisbane QLD 4001
VK5	PO Box 10092, Gouger St, Adelaide SA 5000
VK6	GPO Box F319, Perth WA 6001
VK7	GPO Box 371D, Hobart TAS 7001
VK8	C/o H G Andersson VK8HA Box 619, Humpty Doo NT 0836
VK9/VK0	C/o Neil Penfold VK6NE 2 Moss Court, Kingsley WA 6026

ar

Club News

Hunter Branch Radio Group

A special birthday party was held for Jim Cowan VK2ZC of Newcastle on 21 June at Glen Martin Park. This property near Clarence Town in the Hunter Valley is the home of Jim's son Doug and daughter-in-law Toni.

Fellow amateurs, work colleagues and family attended the surprise 90th birthday party for Jim, who is the oldest currently active radio amateur in the Newcastle, Hunter Valley area.

Jim spent most of his working life in the technical department of commercial radio station 2KO Newcastle.

Jim was presented with a large-read-out digital clock for his shack.

Rodney Prout VK2CN

Secretary

Hunter Branch Radio Group

Summerland Amateur Radio Club

Sunday, 30 August 1998 is the date for the SARC next annual Hamfest. The venue is our Clubrooms, Richmond Hill Road, Goonellabah, Lismore.

Check out the new amateur radio and other gear on offer. There will be heaps of pre-loved radios, computers and electronics gear as well

as Internet and packet facilities. There will also be ATV demonstrations and a fox hunt.

BBQ and refreshments will be available. Also lucky tickets. Make it a family picnic day, and come along and have an eye-ball with your Ham friends.

More information is available from Carl VK2XLT on 02 6624 3838, sarc@nor.com.au or check out our Web site at www.nor.com.au/community/sarc/sarc.html
Graeme VK2GJ
Publicity Officer

Twin Cities Radio Electronics Club Inc

When? Saturday, 8 and 9 August 1998.
Where? Murray High School on the corner of Kemp Street and Kaitlers Road, Lavington (North Albury).

What? A Hamfest, commencing from Saturday lunch time at the High School. Tea, coffee and biscuits will be available and, if enough interest is shown, a foxhunt will be held.

In the evening a dinner will be held at the Commercial Club in Albury with guest speakers. The cost for the dinner is \$25.00 per head, but the drinks are on you.

On Sunday, the doors will be open at 0930 for trading.

In addition to the tempting shack additions, new and second hand, there will be talks on packet, SSTV and Internet usage. Hot and cold drinks and food will be available all day.

Come along and make a great weekend. A talk-in will be on VHF repeater VK3RNE on 147.00 MHz, simplex on 146.50 MHz, and UHF repeater VK3RNE on 439.425 MHz.

For further information please contact Greg Sargent VK2EXA on 02 6021 1741 (BH) or 02 6021 5438 (AH); Fred Armstrong VK3XLV on 02 6026 7350; or Gary Bonner

VK3TGB on 02 6024 7344 (AH).
Fred Armstrong VK3XLV

Wagga Amateur Radio Club Turns 30

Way back in 1968 the present Wagga Amateur Radio Club was formed and has operated continuously ever since.

To celebrate the milestone, the Club is inviting anyone who has had any association with us during that time to a Formal Dinner. The Dinner will be held on Saturday, 29 August 1998 at the Commercial Club, Gurwood Street, Wagga Wagga.

During the afternoon, the Club will be holding a display at the Commercial Club of memorabilia along with amateur radio displays. This part will be open to the public.

The Dinner will be \$25 per head and bookings can be made by contacting John VK2YW on 02 6925 1720 (after hours) or by writing to: The Secretary WARC, PO Box 294, Wagga Wagga NSW 2650.

John Eyles VK2YW

Moorabbin and District Radio Club Inc

Moorabbin Radio Club Classes

A combined Novice Theory and Regulations course will commence on Thursday, 3 September 1998 at the Moorabbin and District Radio Club in Turner Road, Highett. This course will be conducted by Glenn Moore VK3FFX and will run for a period of 18 weeks. Further details can be obtained from Glenn on 03 9531 9301 (AH).

Internet Home Page

Over the last few months the Moorabbin and District Radio Club Inc has been developing its home page on the Internet. This page carries the latest information from the club as well as providing links to other radio related sites around the world.

So, why not visit the page at: <http://www.netspace.net.au/~pgirling/vk3apc.html>. Comments on the content of the page are always welcome.

Denis Babore VK3BGS

Publicity Officer

WIA Victoria Eastern Zone Amateur Radio Club

Gippsland Technical Conference 1998

The WIA Victoria Eastern Zone Amateur Radio Club hosted a very successful Technical Conference on 11 and 12 July 1998. This was the first time the Club had attempted an activity of this sort. It was well attended with operators from VK1, 2, 5, 7 as well as from around VK3. An excellent facility, a lecture theatre in the Churchill Campus of Monash University, was provided. Indeed, the hi-tech podium itself was worth travelling to Churchill to see. Formal sessions



Fellow amateurs who attended VK2ZC's 90th birthday party were (l to r) Norm VK2BNS, Ron Daley (work colleague), Rodney VK2CN, Les VK2RJ, Joe VK2YJ, Jim VK2ZC, Ken VK2KG, Len VK2ZFD, Merv VK2DA, Bill VK2XT and Gordon VK2ZSG.

were arranged to run from 1000 to 1730 on Saturday and 1000 to 1200 on Sunday. BBQ lunches were provided for both days with coffee and tea breaks all included in the modest registration fee. These breaks provided opportunities for much rag chewing and inspection of a large array of equipment brought along by the attendees and presenters.

The program commenced with a talk on meteor scatter by Ron VK3AFW. Ron covered the basics of the propagation medium and operating techniques. He showed that a 100 watt station could, with a little effort from the operator, regularly work over distances up to 2,000 km on 6 and 2 m using SSB. Steve VK3OT gave a popular talk on long Yagis for 6 m, giving practical evidence of their capability and comparing several different designs. For example, two stations with optimised Yagis with 14 m booms can regularly work from Lord Howe Is to South West VK3 on tropo on six metres!. It has been done.

A series of presentations covered the topic of pushing microwaves up hill. Russell VK3ZQB described the dominant propagation modes and how to predict a band opening on 10 GHz. Trevor VK5NC showed us some of the hardware and exposed some of the traps for constructors. Peter VK3KAI discussed equipment and antennas for 1.3 and 2.4 GHz, (including a long Yagi with an electric fence spacer as a boom). Ralph VK3WRE discussed amplifiers and Alan VK3XPD, who chaired this session, explained where to get the bits for a useful microwave station. Look out for more activity on the microwave bands soon!

John VK3ATQ showed why a noise figure of 2 dB and older style local oscillators make for the best rig for 6 m. During his talk he covered the most significant aspects of design of RF amplifiers, mixers and oscillators and presented results of many tests carried out on 6 m transceivers. There was a surprise or two for those who thought the latest rig is better than its predecessor.

A most interesting and different talk was provided by Doug VK3UM who used his 70 cm EME station to monitor the RF outbursts when the fragments of Comet Shoemaker-Levy crashed into Jupiter. When Doug played some of his tapes it sounded like nothing on earth - literally. The scientific explanations for this are yet to come; however, Doug has provided a unique piece of scientific data in a totally professional manner.

That ended day one and most of the participants retired to the local hotel for an informal conference dinner. The discussions were lively and, after the hotel closed, were continued by a hard core until the wee hours in the accommodation. Some were noticeably slow to rise the next morning.

The morning session commenced with Doug VK3UM giving a practical explanation of EME, covering 50 MHz to 10 GHz. Whilst it is necessary to run high power and have a large antenna to be able to call CO and get random QSOs off the moon, Doug showed that a well equipped tropo station can work the big guns. An open forum finished the proceedings. The attendees demanded that another be run next year.

One feature of this conference that is usually missing was organised partner's activities. Pauline, XYL of Tom VK3XBG, is to be commended for her efforts on Saturday and Sunday morning. Everyone of the partners had a ball. Tom is to be commended for his efforts in running the BBQs and a comprehensive tour of the nearby Loy Yang, a power station, on the Sunday afternoon. Even the XYLs found that interesting.

The organising committee, chaired by Peter VK3KAI, are to be congratulated for their achievement. A set of proceedings will be available from the Eastern Zone.

Ron VK3AFW

The Central Highlands Amateur Radio Club of Tasmania

Twice a year the members of the Central Highlands ARC meet in the Central Highlands of Tasmania for social gatherings. They meet in November at VK7NDO's shack at the Penstock Lagoon, and in July at Tiger Hut at Liawenee.

(Great Lake) Tiger Hut gets its name from the hunt in the early 90s for the infamous Tasmanian tiger in the remote western lakes district. The hut was the base camp until the hunt was abandoned. An Army exercise saw the dismantling and helicopter transfer of it, and the re-erection at its present location. It consists of a huge kitchen/dining area with wood heater, five bedrooms each of four beds, and male and female double toilet/bathrooms.

The weekend of 3, 4 and 5 July saw such a gathering at Tiger Hut. We were pleased to have with us a member from South Australia, Darren VK5PJR, who was picked up from Launceston Airport by Victorian members, Dave and Claireen Wilson, VK3JKY and VK3LCM, who attend all of our gatherings.

Darren was delivered to Tiger Hut, introduced to the voices he knew from Thursday Quiz nights, and settled into a pleasant weekend of socialising and radio contacts made around the world on 21 MHz. Darren used a TS-50 belonging to Dave VK3JKY.

The first job on Saturday was to erect a permanent aluminium mast on the end of the hut. This was fitted with a pulley and line for erection of dipoles and/or flags at this and future gatherings. An 80 metre dipole was erected for local VK and ZL contacts. The 15 metre antenna was a car mounted vertical supplied by David VK3JKY.

By Saturday afternoon the gathering had swelled to around 25 (22 amateurs) with the arrival of "day trippers" from all over the State. A huge fire was lit outside and soon the gathering was solving the problems of the world while warming the outside bits with the fire and the inside bits with liquid refreshments (there was snow on the ground in places!).

A carton of "Fizzy Hop Juice" had been donated by Bob VK7NBF for a fund raiser. This was auctioned and raised \$34.00. The lucky recipient was Bryan VK7ZBE, who donated the contents to all present to enjoy.

It was a very pleasant weekend and my thanks go to all who attended and made it a huge success, especially those who travelled from the North Island. The next gathering will be at VK7NDO's at Penstock Lagoon on the first weekend in November.

Bob Geeves VK7KZ

President
CHARC of Tasmania



South Australian visitor Darren VK5PJR and the TS-50 he used at the Tiger Hut.

Ionospheric Update

Evan Jarman VK3ANI

C/o PO Box 2175, Caulfield Junction VIC 3161

Solar Activity

Solar flares increased markedly during the quarter with most activity in May. Of the 27 M and X class flares reported by the Ionospheric Prediction Service, 17 were in May. 15 of these flares occurred in the first ten days of the month.

Two solar regions that appeared late in April were responsible for most of this flare activity. These regions declined as the sun rotated, returning uneventfully on the eastern solar limb later in May.

Four class X flares came from this region. They were:-

23 April - X1.2 @ 0523-0623 UTC

27 April - X1.0/2B @ 0855-1659 UTC

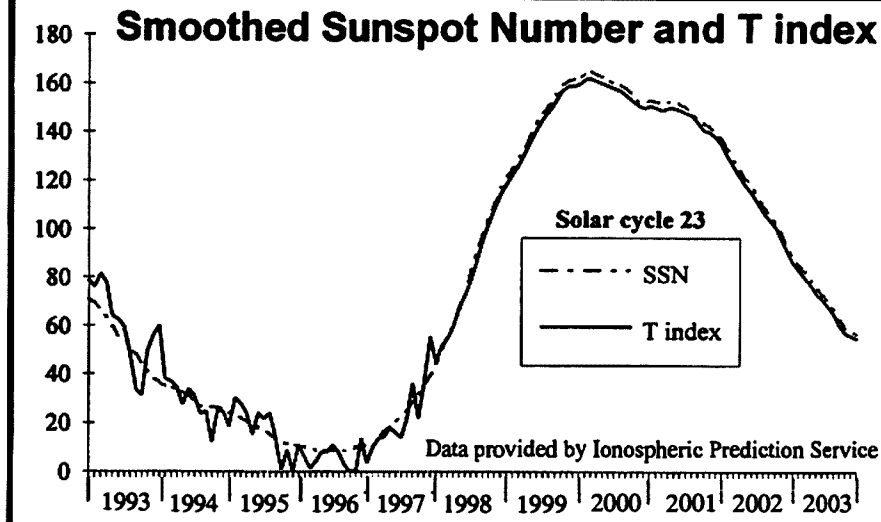
2 May - X1.1/3B @ 1331-1351 UTC

6 May - X2.7/1N @ 0758-0820 UTC

Solar flare activity in late May was due to a new region. This produced a class M6.7 flare on the western limb and some more much smaller M class flares when it reappeared on 11 June.

Ionospheric Activity

Again activity in May was affected by events related to solar activity. Polar cap absorption events believed to be associated with proton events from the X class flares degraded high



frequency activity significantly. Activity was enhanced at lower latitudes and degraded at higher latitudes.

On 4 May the Ionospheric Prediction Service reported f2 critical frequencies in Darwin were enhanced by 70% between 0600-0900 UTC. The peak f2 critical frequency was 17 MHz. At the same time in Hobart, f2 critical frequencies were depressed by 50%.

Spread F was observed at mid to high latitudes during evening hours around 18-24 May. Strong spread F continued at higher latitudes during evening hours until 28 May.

Geomagnetic Activity

Apart from May activity, the only significant disturbances followed coronal mass ejections on 21 April and 22 June when activity rose to minor storm level.

In May there were two disturbances. The stronger was around 2-5 May where the local A index reached 54 and the planetary A reached 96. Auroral sightings were reported during this disturbance, including by the writer who was holidaying in Norway. Aurora Borealis is a

wonderful sight. The disturbance is believed to be associated coronal mass ejections from a class M6 flare on 29 April and the class X1 flare on 2 May.

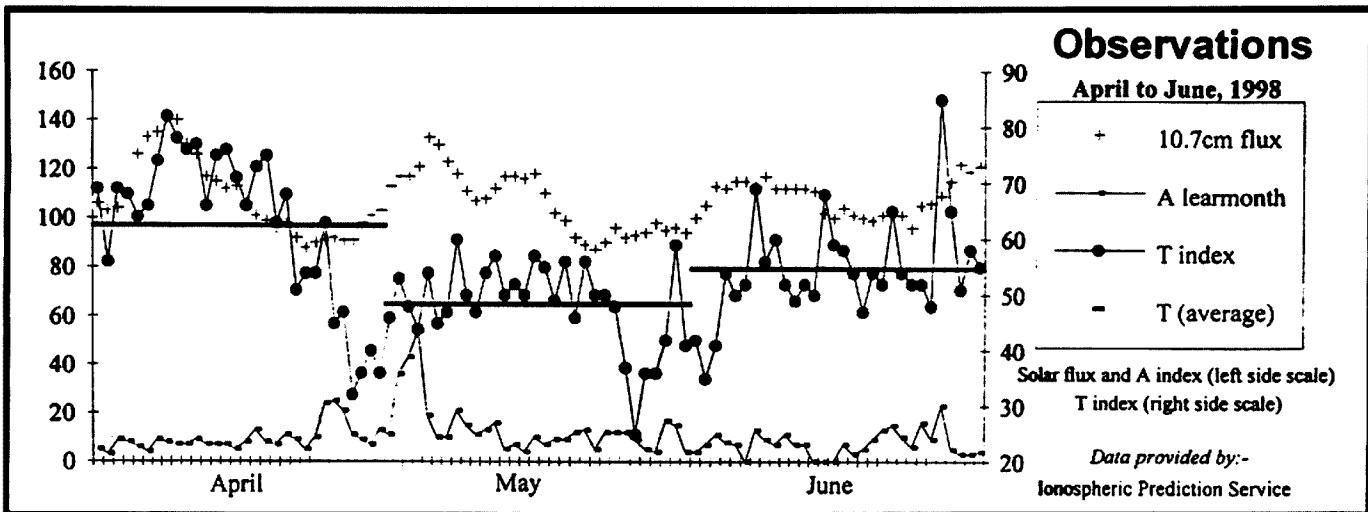
The latter May activity was probably due to a coronal mass ejection on 27 May combined with some coronal holes as the solar wind had a superimposed shock.

ASAPS Version 4

The Ionospheric Prediction Service have released version 4 of the Advanced Stand Alone Prediction System. The additional features include predictions to regions and the use of 3-D antenna gain patterns which can be imported from other applications. Printed tutorials, which include exercises, have been added to help users understand the program's operation.

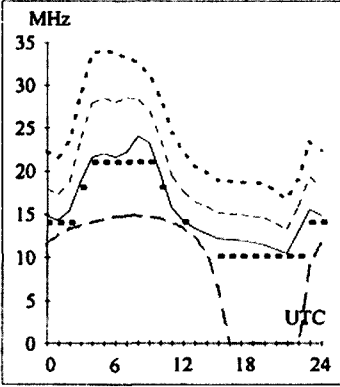
A demonstration version can be downloaded from the Web; the address is <http://www.ips.gov.au>. You will need the full system to make realistic predictions. The cost is \$350. Upgrades from version 2 or 3 cost \$50.

ar

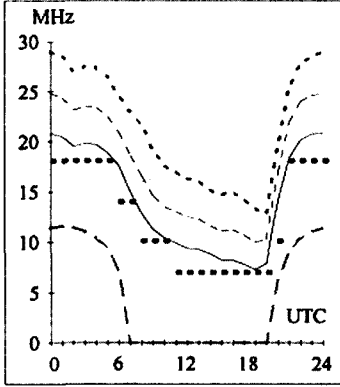


HF Predictions

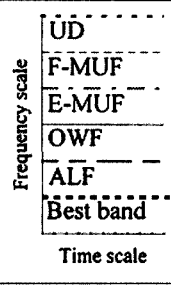
Adelaide-Amman 292
First F 0-5 Short 13022 km



Brisbane-Auckland 123
First 1F7-9 1E0 Short 2289 km



T Index: 85

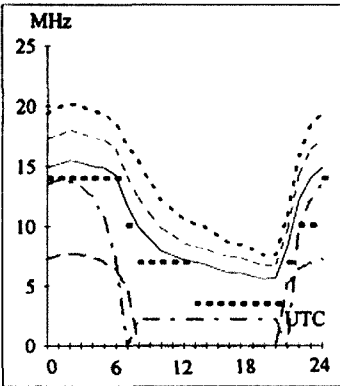


These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. They also nominate the best amateur band for communication. The frequencies, identified in the legend, are:-

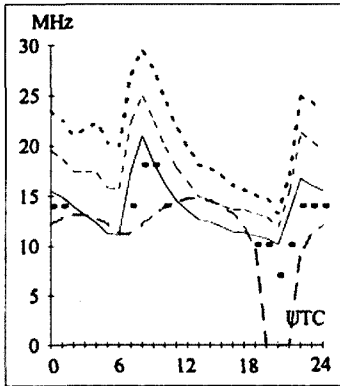
- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

The predictions were made with the Ionospheric Prediction Service program, ASAPS v3.2. The T index used is shown above the legend. The Australian terminal azimuth, path and propagation mode are also given for each circuit.

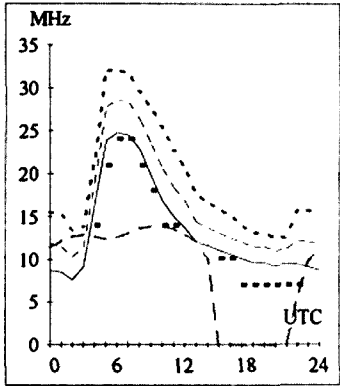
Adelaide-Invercargil 126
Second 2F16-19 2E4 Short 2795 km



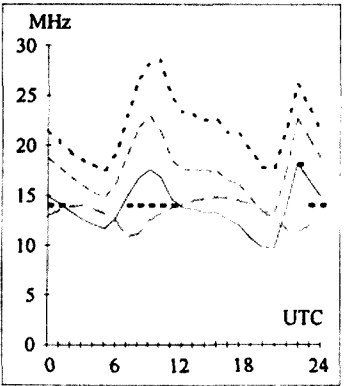
Brisbane-Dakar 217
First F 0-5 Short 18280 km



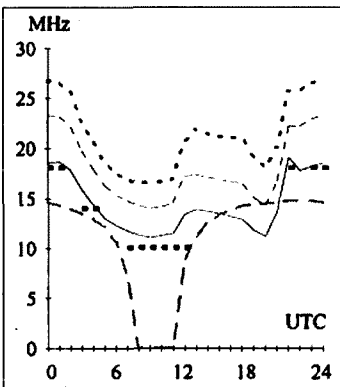
Canberra-Lusaka 239
Second 4F3-4 4E0 Short 11620 km



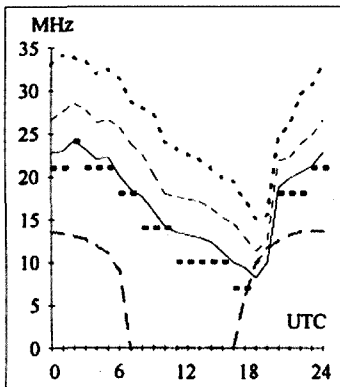
Darwin-London 145
First F 0-5 Long 26170 km



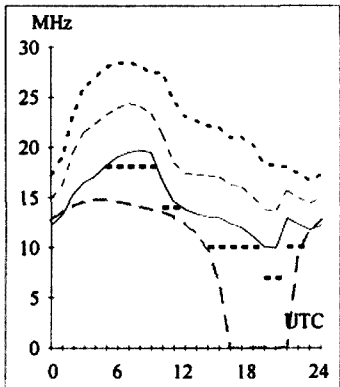
Adelaide-New York 67
First F 0-5 Short 17092 km



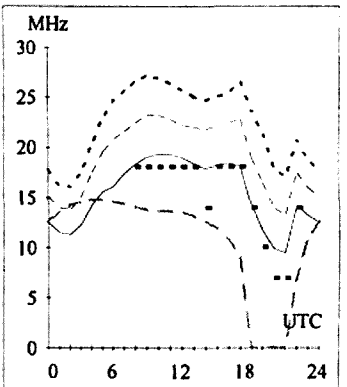
Brisbane-Honolulu 49
Second 3F5-10 3E0 Short 7589 km



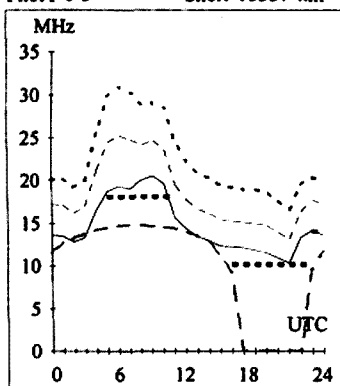
Canberra-Moscow 317
First F 0-5 Short 14481 km



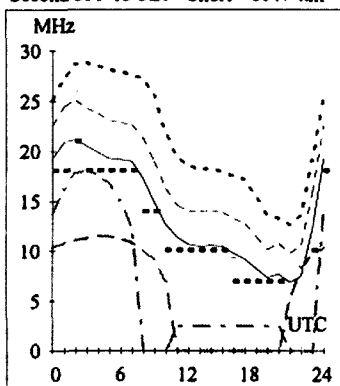
Darwin-London 325
First F 0-5 Short 13854 km



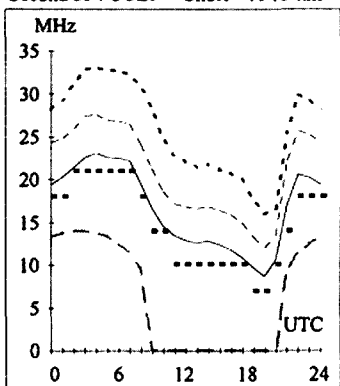
Adelaide-Rome 296
First F 0-5 Short 15337 km



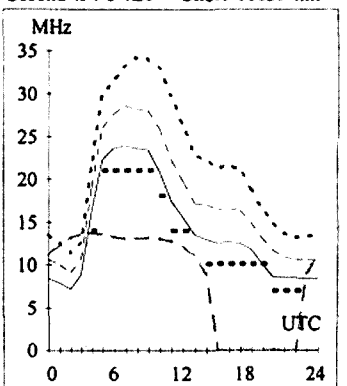
Brisbane-Singapore 293
Second 3F9-13 3E0 Short 6147 km



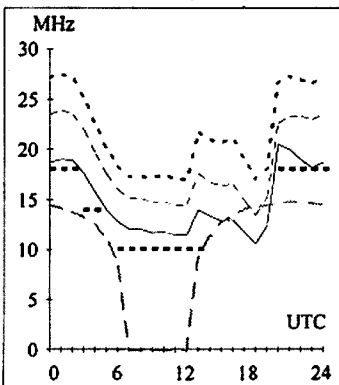
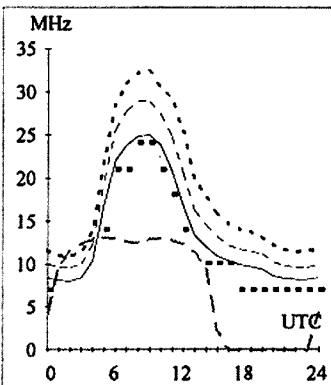
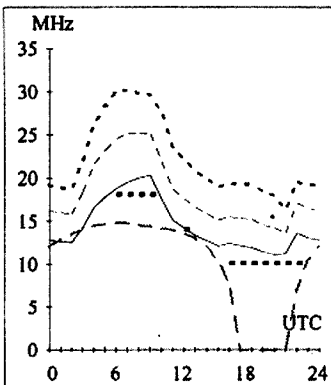
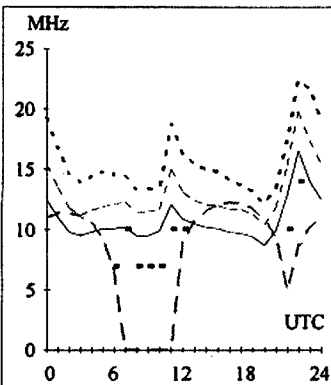
Canberra-Tokyo 352
Second 3F4-8 3E0 Short 7948 km



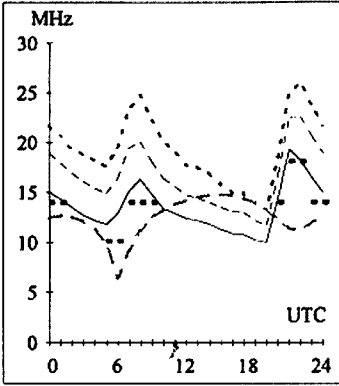
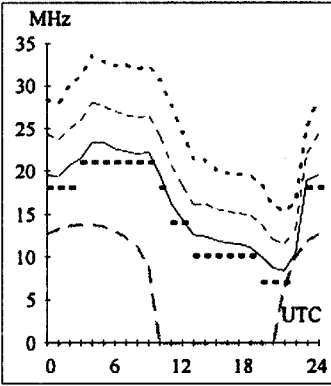
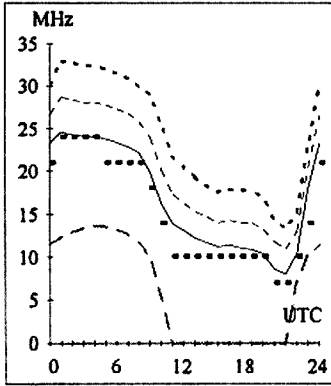
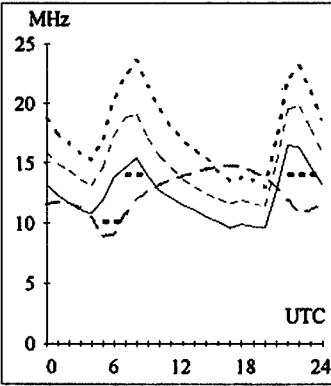
Darwin-Pretoria 242
Second 4F4-6 4E0 Short 10639 km



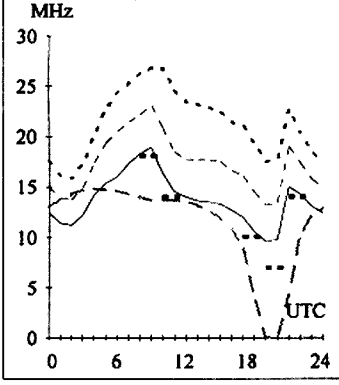
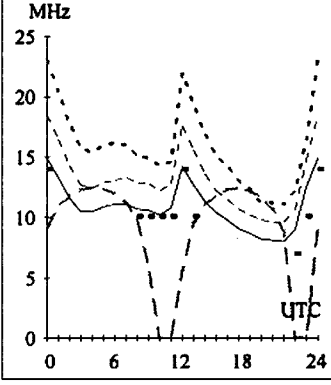
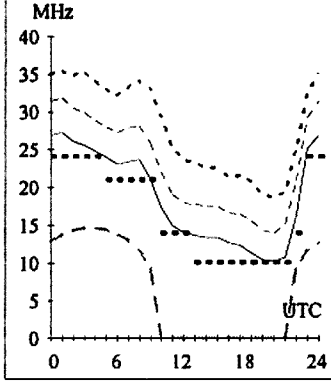
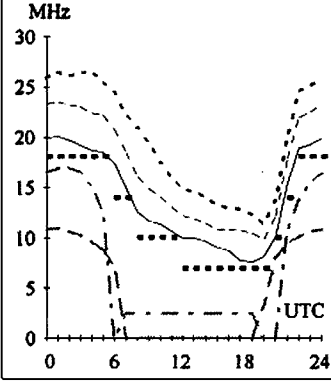
Hobart-Montevideo 161 **Melbourne-Budapest, 302** **Perth-Capetown 237** **Sydney-Chicago 62**
 Second 4F3-4 4E0 Short 11043 km First F 0-5 Short 15557 km First 3F3-4 3E0 Short 8702 km First F 0-5 Short 14876 km



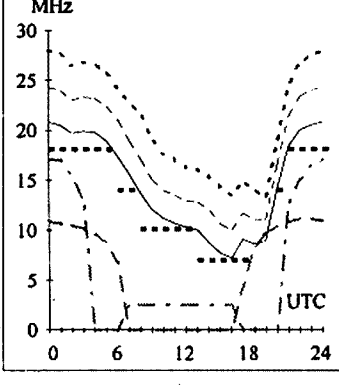
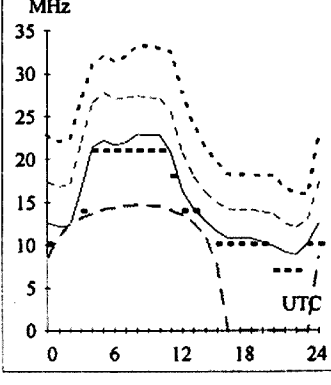
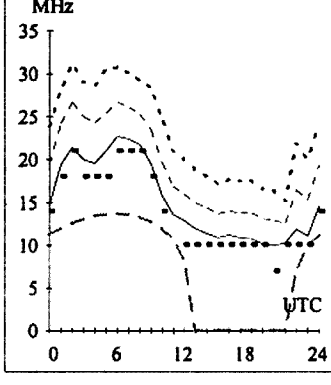
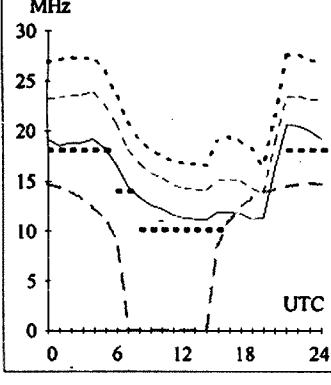
Hobart-Stockholm 136 **Melbourne-Jakarta 303** **Perth-Osaka 17** **Sydney-London 139**
 First F 0-5 Long 23871 km First 2F4-6 2E0 Short 5214 km Second 3F5-10 3E0 Short 7684 km First F 0-5 Long 23032 km



Hobart-Suva 56 **Melbourne-Manila 332** **Perth-Santiago 174** **Sydney-London 319**
 First 2F9-11 2E0 Short 4011 km First 2F1-6 2E0 Short 6342 km First F 0-5 Short 12709 km First F 0-5 Short 16992 km



Hobart-Vancouver 49 **Melbourne-New Delhi 306** **Perth-Tel Aviv 302** **Sydney-Papeete 88**
 First F 0-5 Short 13428 km Second 4F5-10 4E0 Short 10201 km Second 4F4-9 4E0 Short 11091 km Second 3F9-11 3E0 Short 6122 km



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Fax: 03 9584 8928
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- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscott Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
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FOR SALE ACT

- **Yaesu FT-920 HF txcvr, CW filter, \$1900.** Kenwood TS-820 HF txcvr, CW filter, ext speaker, set spare valves, \$490. Bill VK1WN, 02 6258 9295.

- **HP432C microwave power meter with HP478A powerhead and cable. HP618C microwave signal generator, from 3800 to 7800 MHz (6 cm band) Any offers? With purchase of either, you get one HP3476B digital VOM for free. All manuals supplied. Peter VK1CPK, QTHR, 02 6231 1790, pkloppen@dynamite.com.au .**

FOR SALE NSW

- **Moving sale! GME 35 amp peak PSU, \$390. Pakratt PK-232 MBX, \$400. Kenwood TR-751 2 m SSB txcvr, \$700. Sangean ATS-803A world receiver, \$180. Brother M1709 printer with spare ribbon, \$80. 20 ft tower, rotator, 24 V PS control with 10 ft extension tube, \$300. All excellent condn. Charlie VK2NAJ, QTHR, 02 9604 7454.**
- **Icom IC-W21E dual band 2 m and 70 cm FM hand held txcvr, BP-132 battery pack, workshop manual, \$420. Randall VK2EFA, QTHR, 08 8087 5285.**
- **Shack clearance! DC power supplies, various to 10 A. 386 IBM clone computer, \$200. Epson NX15 9 pin printer, up to 14 inch wide, \$95. HF rxcvr, USB/LSB, 100 kHz - 30 MHz, \$250. AT-120 mobile ATU, 80 - 10 m, \$250. IC-720A HF txcvr, damaged front panel, parts, did work before damage, offers. Ted VK2EZQ, QTHR, 019 460 437.**
- **Alden, made in USA, SW/HF receiver, 100 kHz to 29.999 MHz in 1 kHz steps with fine tune, LSB and USB, 12 V or 24 V DC or 100 - 240 V AC operation, box is size of Epson FX80 printer, originally a dedicated weatherfax receiver, receiver and fax printer fully operational but paper obsolete, audio output via speaker or jack plug, \$250. Ted VK2EZQ, QTHR, 02 9477 7834, 019 460 437.**
- **Kenwood TS-520S SSB txcvr, s/n 710196, with Hustler 4BTV trap vertical antenna, offers considered. Jim VK2DEC, 02 4751 5531.**
- **Osborne 486DX computer, SVGA monitor, 8/170 Mb, \$350. Half inch magnetic tape, new, \$10 per 350 m reel. Sharp 286 laptop, mono VGA display, 12 V internal Ni-Cad batteries, charger, case, \$200. 3 Com net builder bridging router, serious offers. Neville VK2QF, 02 6373 8624, fax 02 6373 8611 for full details**
- **DGT400 satellite digital receiver, new in box, instruction book, ready for immediate use, \$480 ONO.**

Peter VK2BPO, QTHR, 02 9713 1831, brunone@bigfoot.com .

- **Yaesu FRG7 receiver, mint condn, \$190 ONO.** Kevin VK2BJK, QTHR, 02 9449 1598.
 - **MN-26 radio compass, \$30, or swap for valve radio, transmitter or test equipment. Ray VK2ILV, QTHR as VK2ZON, 02 9489 8561.**
 - **Angle iron rack 24" H x 20" W x 17" D, all sides louvered panels, 2 decks, slide in chassis with various transformers, chokes, caps, etc. \$225 ONO. Mild steel cabinet, 10.5" H x 19" W x 17" D, hinged top lid, slide in chassis, Collins VFO, Labgear 5 band multiplier, transformers, etc. \$150. Art VK2AS, QTHR, 02 9416 7784.**
 - **Hustler mobile whip antenna complete with all whips 80, 40, 20, 15 and 10 m, \$150 ONO. Hygain DB 10-15 3 el duo-band beam, 1 kW rated, \$125 ONO. Transformer 240 V - 110 V, 2 kVA, \$100 ONO. Art VK2AS, QTHR, 02 9416 7784.**
 - **DGT-400 satellite system, s/n 600200044, to receive TV from Germany, England, Italy, Spain and France (one channel each) plus 11 other FM radio stations, includes 2.2 m dish, stand, LNA feed horn and receiver in digital, the lot only \$800. M Mondolo VK2AML, QTHR.**
 - **Kenwood TS-830S txcvr, SM-220 station monitor with bandscope, AT-230 ATU, VFO-230 ext VFO, SP-180 spkr, TS-600 six metre all mode txcvr, all with manuals, \$1600 for the complete station, no offers, all in good condn. P Martin VK2DNO, QTHR, 02 4995 6137.**
 - **P200 MMX computer, 3.1 G HDD, 32 M RAM, 24X CD-ROM, 1.44 M FDD, 15" colour monitor, 104 keyboard, 33.6 k internal modem, mouse, sound card, mini tower, WIN95, MSWKS, \$1000 or swap for portable. Geoff VK2BGP, 02 6743 6519.**
- ## FOR SALE VIC
- **Kenwood TS 711-A all mode 2 m txcvr, s/n 5110320, \$200. SWR Bridge, 52 and 75 ohm, \$20. Yaesu Musen FL-1000 linear amp, \$200. Three SR-CI46A 2 m FM txcvrs, 5 channels, s/ns W160276, W240396 and W240343, two 240 V power supplies, manuals, all for \$100. Coax cable 15 metres long, RG-213/U 50 ohm, new, \$30. *Electronics Australia* low distortion audio oscillator (built from Dick Smith kit), \$25. Goodwill frequency meter, 0-100 kHz, 0.1-550 MHz, \$50. AWA regulated power supply, 13.6 V 5 A, \$25. Advance Signal Generator, s/n 191, 2 MHz - 190 MHz, \$30. Yaesu Musen FT-2B 2 m txcvr, with PSU, ATU and SWR bridge, \$100. Three Vicom mobile whips with base, 80/40/20 m, \$100. Kenwood TS-120S HF txcvr, with PSU, s/n 0052783, ATU, s/n 5080147, and commercial G5RV antenna, a complete station, \$500. No 62 set Mk II HF AM txcvr, \$50. Home Brew Gear: 14 V DC power supply, \$20. Signal Tracer, AF and RF, \$20. VTVM, \$20. All prices negotiable. Disposal due to ill-health. Peter VK3XK, QTHR, 03 9583 2895.**
 - **Yaesu FT-101E HF txcvr, s/n 8J361411, spare final, \$300. FT-101E, s/n 8J361474, factory modified for Novice use, spare final, \$300. Yaesu FT-7 HF txcvr, s/n 8K110561, \$250. Yaesu FT-23, s/n 6D410747, \$100. Icom IC-551 6 m all mode txcvr, s/n 08888, \$350. All rigs with mic, handbook and in excellent order. Star 700 receiver, works but needs attention, \$125. Harvey VK3AHU, QTHR, 03 5798 1451.**
 - **Nally self supporting tower, 42 ft with winch, double pulley vertical lift and heavy duty wire rope, complete with Emotator 1103MXX rotator and controller, 7 wire cable and end plugs, 15 ft 50 mm scaffold pipe included, buyer to arrange removal, offers to: Jack VK3SP, QTHR, 03 9842 1841.**

● **Yaesu 290R/2** 144 MHz FM txcvr, works OK, \$100 ONO. **Yaesu SP-901** speaker and phone patch module, \$90 ONO. **Heathkit SWR bridge**, old model but works OK, \$40 ONO. **Yaesu FT-747GX HF txcvr**, EC, in original packaging, \$950 ONO. **Ten Tec Scout 555** single band QRP txcvr with 40 m plug in, EC, list price \$1199, will sell for \$600 ONO, other band plug in modules available at \$35 each. **Philmore field strength meter**, \$20. **MFJ 1022 active antenna** 300 kHz to 200 MHz, list price \$99, sell for \$60 ONO. **MFJ 986** 3 kW antenna tuner, covers 1.8 - 30 MHz. **SWR meter** and balun built in, EC, list price \$629, sell for \$400 ONO. **Harold VK3AFQ**, QTHR, 03 9696 2414 anytime.

● **FT-101ZD HF txcvr** in working order, with spare valves, CW filter, cooling fan, matching external speaker, mic, DC power lead, and instruction manual, \$400. **H Lonsdale VK3DND**, QTHR, 03 5153 0717.

● **Command Rx 6-9.1** and 3-6 MHz, no dynamotor but good condn, \$100 each. **NOS BC497A control box**, \$70. **NOS FT234A rack** for 1 x Tx, \$50 - two available. **Transformer**, 3.4 kV secondary at 0.5 amp, primary 440 or 260 V, heavy, \$150. Will deliver to Melbourne. **Peter VK3IZ**, QTHR, 03 5156 2053, jupeter@net-tech.com.au.

● **Kenwood TM-241A 2 m txcvr**, crystal controlled, complete with crystals, mast and feeder. **Noel VK3DPB**, QTHR, 03 9306 9231.

● **Estate of George VK3DOK: Yaesu FT-101E HF txcvr**, \$350.00. **Yaesu YD-148 mic**, \$50.00. **Icom IC-2GA VHF FM handheld**, 5 W, 2 spare battery packs and charger, \$300.00. **PV-35 2 m RF amplifier**, solid state, FM only, **Dick Smith D-2515**, \$80.00. **Icom IC-728 HF txcvr**, hand mike, FM module, \$950.00. **Tokyo Hy-Power Labs HC-500A ATU**, \$75.00. **Power supply 13.8 V, 4 A**, \$40.00. **Dick Smith D-1200 40 channel CB radio**, new, \$60.00. **Cushcraft Ringo Ranger ARX-2**, \$120.00. **Terlin Outbacker mobile antenna**, 40/80 m, \$90.00. **Listening antenna**, \$10.00. **12 V Gel batteries**, \$20.00. **Bob VK3BNC**, 03 5339 5317, terril@giant.net.au.

● **Yaesu FRG-7** receiver, EC, \$175. **Icom IC-701 100 W HF txcvr**, with matching PSU, etc, EC, \$350. **Yaesu FT-290R** all mode 2 m txcvr, \$250. **Icom IC-22S 2 m FM txcvr**, EC, \$100. **Icom IC-229H 50 W 2 m FM txcvr**, \$250. **Kenwood TS-430S HF txcvr**, with FM, \$650. **Ron VK3OM**, QTHR, 03 5944 3019.

● **Ten-Tec Argonaut 505 txcvr** with PSU, SWR-power meter, manual, in original boxes, ideal QRP operation, \$225. **Yaesu FT-411 2 m handheld txcvr**, s/n 9L162574, with manual, carry case, speaker mic, charger, belt clip and door sill bracket, had little use, \$295. **Dick VK3LDC**, QTHR, 03 5330 1927.

● **Icom IC-901E** multi-band system complete, 10, 6 and 2 m plus 70 cm and scanner modules, remote mount kit with fibre optic cables, all manuals, etc, \$1800 ONO. **Damien VK3RX**, 03 5427 3121.

● **Collect free an original Hewlett Packard HP9845A** computer from the 1970s, immaculate condn with all manuals, data tapes and even a PROM burner, a real collector's item, used to do engineering calculations on multilevel VHF antennas, to a good to throw out but sadly must do so in two months time so please rescue it! **Electronics Australia** magazine, about 40 issues covering 1965-1980s, \$10 the lot. **Ceramic and mica high voltage RF capacitors**, various values, 800 pF, 1000 pF, 2000 pF, etc, \$12 each. **Glenn VK3FFX**, 03 9531 9301 (AH), glmoore@bigpond.com.

● **Shack re-adjustment sale: Kenwood TS-440S** all mode HF txcvr, 100 W, gen coverage Rx, 1.8 - 30 MHz, FM, AM and narrow SSB filters, matching PS-30 heavy duty PSU, SP-230 external speaker, hand mic, MC-50 base mic, operator's manual, mint condn, selling as complete system only, will NOT separate, \$1150. **Kenwood TS-430S** (TS-43X Australian special), all mode HF txcvr, 100 W, 1.8 to 30 MHz, gen coverage Rx, FM filter, exc condn, hand mic, operator's manual, copy service manual, \$ 650. **Power supplies: Yaesu FP-301 and FP-107E**, 13.8 V 20 A peak, \$150 each or \$275 for the two. **Yaesu FT-411 2 m FM handheld txcvr**, NiCad batt pack, DC car adapter/charger (no AC charger), operator's handbook, exc condn, \$200. **Icom IC-2A** hand held 2 m FM txcvr, external mic/spkr, works well, good condn, \$1 00. **Icom IC-290A** all mode 2 m FM/SSB txcvr, 10 W, mic, handbook, good condn, \$295. **Icom IC-490A** all mode

70 cm FM/SSB txcvr, 10 W, mic, handbook, matches size and appearance of IC-290A, \$340. Sell both IC-290A and IC-490A for \$600. **Packet system: Shepparton 220 TNC** faithfully constructed, **Microbee XT 640k computer**, mono screen with appropriate packet software, some cables, a bit grey around the temples but a real fire eater, \$175 the lot. Also some computer spare parts, network cards, systems, monitors, 2 mobile phones (VOXSON analogue). **Bruce VK3UV**, QTHR, 03 9580 6424, fax 03 9580 8380, mobile 0418 386 030, vk3uv@bookmate.com.au

FOR SALE QLD

● **Kenwood TL-922** linear amplifier, s/n 750058, new Eimac finals, \$1700. **Yaesu FL-7000 500 W solid state linear amplifier**, s/n 7H080072, \$1800. **KT-34XA 6 el triband antenna**, \$500. **HAM-3 rotator** with bottom bracket, \$450. **JRC NRD-505 rxcvr**, **NSD-505 Tx**, **NBD-505 PSU**, \$800 ONO. All manuals. Visiting Brisbane mid August, Sydney end of August. **Adolf VK4DHF**, 07 4096 6961.

● **Tokyo HC-500 High Power ATU**, \$185. **Shure 444** desk mic, \$110. **Heathkit HD15** phone patch, \$150. **ACI rugged HF ATU**, \$125. **Murdoch USA** antique communication headphones P-23, \$110. **Drake MS-4** communication speaker, \$125. **Yaesu MH-12A2B** speaker/microphone, \$55. All free delivery. **John VK4SKY**, QTHR, 0417 410 503.

● **Icom IC-740 HF txcvr**, in excellent operating order and appearance, with two VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, good reports on transmissions on all bands, sensitive receiver, copy of spec sheet available, \$590. **0-250 V/1.8 A variable auto-transformer**, unused, very useful for workshop and experimental use, \$55. **VK4SZ**, QTHR. 07 4061 3286, johnb@comnorth.com.au.

FOR SALE SA

● **Kenwood TS-50 HF txcvr**, excellent condn, very little use, \$1400. **8 el log periodic**, assorted CB and amateur gear, all must be sold, send SASE for list. **Paul VK5MAP**, QTHR, phone/fax 08 8651 2398.

● **Kenwood TR-2400 2 m handheld txcvr**, base stand/charger/mains PSU, **Shure** handheld mic, **BC-5** car power supply. **Jim VK5JJ**, 08 8295 8094.

● **From estate of the late Bill Tresize VK5RA. Yaesu FT901-DM HF txcvr**, s/n 8G040173, instruction manual, maintenance manual, hand mic, \$350 ONO. **Yaesu FV901-DM** synthesised scanning VFO, s/n 8I020108, top of case marked but OK, \$200 ONO. **Kenwood TH-215A 2 m h/bd txcvr**, s/n 8011239, charger, spare battery, manual, carry case, \$150. **Micronta HF power meter** with detachable sensor unit, 10/100/1000 W, \$40 ONO. **Oskerbiok SWR200 HF/VHF power meter**, s/n 70686, \$130 ONO. **Welz SP-300 SWR/power meter**, 1.8 to 500 MHz, 1000 W, \$150 ONO. **AEA Pakratt PK232** multi-mode data controller, operating manual, \$250 ONO. **Yaesu YD140** desk mic, \$50. **Leader TR dipmeter LDM815**, \$40 ONO. **Tower**, free standing triangular, approx 12 metres, with **Hy-Gain TH6-DXX** tri-band beam, **Daiwa DC7011** rotator and control unit, a bargain at \$600, buyer to dismantle. Contact **Ian VK5QX**, QTHR, 08 8250 1708.

FOR SALE TAS

● **Kenwood TS-140S HF txcvr**, 160-10 m including general coverage receiver 150 kHz to 30 MHz, mint condn, including boxes, manuals. **Kenwood TS-430S HF txcvr**, 160-10 m including general coverage receiver, SSB/CW/AM narrow filter, GC, AM, SSB CW only. **Allan VK7AN**, 03 6237 1171 or 0417 354 410.

● **Five acres, three bedroom home, antenna systems**, handy shops. **V J Kitney**, 03 6257 8471.

● **Heathkit SB230** linear amplifier, uses 8873 triode capable of over 400 W, can be driven by any txcvr such as TS-520, 820, etc, tube almost new, complete with instruction manual, \$600. **R A Murphy VK7ARM**, 03 6257 0400, fax 03 6257 0411.

WANTED ACT

● **Old valve BC radios** and valves and parts. **Les VK1BVC**, QTHR, 02 6291 6187 (AH), 02 6261 3019 (BH).

● **Guillotine** suitable for 1.6 mm thick aluminium, and width 400+ mm. **Small metal lathe** suitable homebrew work, ie turning shafts and stand-offs, etc. **Keith VK1KG**, QTHR, 02 6292 6464.

WANTED NSW

● **Factor modem** and/or software, to buy. **Manual for PK-232** to copy or buy. **Ted VK2EZQ**, QTHR, 019 460 437.

● **Wagner Model M50** marine SSB HF circuit and PC diagrams, or any other, will pay costs copying, etc. **Keith VK2AXN**, QTHR, 02 9489 0304.

● **Shortwave receivers**, military or commercial, working or not, big heavy gear very welcome, **Marconi**, **Collins**, **Racal**, etc. I challenge you to give me a hernia! **Parts and old unloved military gear** also welcomed! If necessary, I will pay dollars. **John L21068**, 02 9533 6261.

● **Hi-Gain-V CB23** txcvr schematic circuit and data. **Jim VK2BGG**, QTHR.

● **YG-88C CW filter** for **Kenwood TS-820**. **John VK2EBP**, 02 9831 3810.

WANTED VIC

● **Ham Radio** magazine, Feb and Mar 1970 issues, Nov and Dec 1973 issues. **VHF Communications**, all issues from 1987 to 1996. Will buy complete sets if necessary. **Richard VK3ZCL**, 03 9571 4065, rgipps@netspace.net.au.

● **Yaesu FT-720R 2 m/70 cm txcvr** circuit diagram and tune-up data, all costs covered. **Charlie VK3DCS**, QTHR, 03 5331 7425.

● **FRG7** receiver in GWC, will pay \$125 as is, or \$140 with good external speaker. **Glenn VK3FFX**, 03 9531 9301 (AH), glmoore@bigpond.com.

WANTED QLD

● **Manual for Daiwa CR-4** round controller and **Daiwa MR750** rotator. **Mike VK4MIK**, PO Box 170, Yungaburra, QLD 4872, 07 4096 8302.

● **Uniden 2020 txcvr** remote VFO and speaker, also workshop manual, good condn only. **Paul VK4YKR**, 070 513 370.

WANTED SA

● **Operating instructions for Micronta 22-202B** multimeter. **Paul VK5MAP**, QTHR, 08 8651 2398.

● **Switch lever (AVC/OFF/MVC)** and any identification plate for **BC348** receiver (being restored). **Malcolm VK5BA**, QTHR, phone/fax 08 8280 7192, malcolm.haskard@unisa.edu.au.

WANTED WA

● **Kantronics TNC**, **KAM Plus** or **KPC-x**, must have **Factor 1** and **G-Tor** chips and software (IBM). **Bob VK6KW**, 08 9574 1467, DAYBREAK.CAMPFARM@Bigpond.com.

WANTED TAS

● **MFJ-764** dry dummy load. Also any information on the **GSRV antenna**. **Tony VK7CAJ**, QTHR, 03 6227 9292 (phone/fax).

MISCELLANEOUS

● **The WIA QSL Collection** (now Federal) requires **QSLs**. All types welcome, especially rare DX pictorial cards, special issue. Please contact the **Hon Curator**, **Ken Matchett VK3JTL**, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

● If you got your licence before 1973 you are invited to join the **Radio Amateurs Old Timers Club**. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. **Arthur Evans VK3VQ** or **Milton Crompton VK3MN** can supply applications forms. Both are QTHR in any Call Book.

● **Summerland Amateur Radio Club Annual Hamfest** will be held on **Sunday, 30 August** at the **SARC Clubrooms**, 412 Richmond Hill road, **Gonnellabah**. All are welcome. **Amateur** and **CB radio** displays, computers, electronics, new and old gear for sale, **ATV** demo, packet and Internet facilities, fox hunt, refreshments, **BBQ**, lucky tickets. For a stand, contact **Carl VK2XLT** on 02 6624 3838, or **Graeme VK2GJ** on 02 6685 1336, or the Club's e-mail address sarc@nor.com.au.

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Weekly News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blemings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc.newsgroup , and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au Web: http://www.tbsa.com.au/~wiavic/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWW 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Colin Gladstone Secretary Peter Harding Treasurer Alistair Elrick e-mail address: wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powerup.com.au	VK4ACG VK4JPH VK4FTL	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8284 0463	President Ian Hunt Assistant Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6KZ VK6ZLZ VK6OO	146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busselton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.563 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Ron Churcher Secretary Paul Godden Treasurer John Klop Web: http://www.wia.tasnet.net	VK7RN VK7KPG VK7KCC	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.825 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				

Note: All times are local. All frequencies MHz.

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Only one transceiver gives you all-mode operation on the HF, 6m, 2m, and 70cm bands with full satellite capability... the new Yaesu FT-847 "Earth Station"

Ready for action on SSB, CW, AM, FM and Digital modes, the FT-847's compact size makes it ideal for a variety of portable/mobile applications as well as for serious base station operation. You get a solid 100W output on the HF and 6m bands, 50W output on both 2m and 70cm, dual fan cooling and a rugged diecast chassis. Plus, the ultra-quiet HEMT receive pre-amps on 2m and 70cm contribute to the FT-847's industry best sensitivity figures. Advanced Digital Signal Processing (DSP) circuitry enhances received signal/noise ratios for easier copy of signals under marginal conditions through the use of 16 selectable noise reduction algorithms, while the Bandpass and Auto-notch filters aid the IF based Shift and Noise Blanker circuits in reducing interference on crowded bands.

The FT-847 is ready for satellite operation, with crossband full duplex operation, normal and inverted VFO tracking of the satellite uplink/downlink, as well as 12 special satellite memories with alpha-numeric name tags. Also provided is a low-noise Direct Digital Synthesiser (DDS) that provides tuning steps as small as 0.1Hz, plus there's an adjustable DSP bandpass filter as narrow as 25Hz for exceptional weak-signal CW performance. You can also install optional Collins® mechanical filters in both the transmit and receive chain for enhanced SSB operation, as well as a 500Hz Collins® filter in the receiver side for CW. An RF-style speech processor with adjustable frequency shift voice tailoring is also provided to add punch to your SSB transmissions.

The FT-847 is ready for data modes, with a rear panel Data In/Out socket and a Packet socket for 1200/9600 baud VHF/UHF operation. Other features include extended receiver coverage (37-76, 108-174, and 420-512MHz), a high-speed computer control interface, 10 key keypad for band/frequency entry, and a Shuttle-Jog tuning ring for fast QSY. Also included are encode/decode CTCSS and DCS operation, selectable channelised steps for FM operation, an iambic CW keyer, FM narrow/wide modes for 29MHz use, and a large LCD screen with adjustable backlighting.

Each transceiver is supplied with a hand-mic, DC power lead and a comprehensive instruction manual. Call us for a copy of Yaesu's 6 page colour brochure to learn more about this incredible value "Earth Station" transceiver.

2 YEAR WARRANTY

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746

Looking for a rig that is powerful and versatile to satisfy all your base station needs? Look no further than Icom's new IC-746. You get HF + 6m + 2m band coverage with 100W of output power on all bands. You'll have the power you need and remarkable

clarity too with DSP functions standard. The large, multi-function LCD keeps you totally informed and makes the new IC-746 so easy to use. Hear this powerful performer soon at your nearest Icom dealer or call Icom on 1800 338 915.

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Amateur Radio



September 1998

Volume 66 No 9

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- The new Yaesu FT-847 as reviewed by Ron VK3OM
- Ian VK5QX reviews VK5MIR Operations
- An LF Antenna Bridge designed by Lloyd VK5BR

Plus *lots of other articles, news and special interest columns*

QMS - 7

Antenna Coupler System

Quick Mount System
for mobile HF and VHF use



SG-230 MICROPROCESSOR CONTROLLED ANTENNA COUPLER (1.6-30MHz) 200W Smarttuner

The SG-230 Smarttuner automatic antenna coupler can be used within its power rating with any HF Transceiver in range of 1.6-30MHz. Designed for marine, portable and fixed base applications. For antenna types: 23ft marine whip for 1.6 to 30MHz and with 9ft. minimum antenna for 3-30 MHz operation

Number of channels unlimited
Frequency range 1.6-30 MHz
Power rating 200 watts PEP maximum 12 VDC. operation
SWR: Less than 1:1.5
Tune power: 3 watts nominal
Weight: 8Lbs.
Dimensions: 12.5 x 10.5 x 3
Supplied with 9ft. cable for coaxial and DC power.

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Cover

WIA Federal President Peter Naish VK2BPN in his radio shack at his home in Sydney.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

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PHOTOSTAT COPIES

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The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

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Viewpoint

Editor's Comment

Editor's Comment

No, you're not seeing double! The following paragraphs are indeed the Editor's comment on the subject of "Editor's Comments". The desirability of making a few comments has been the result of three things.

First, some criticism of past editorials which have not always been entirely relevant to amateur radio; a criticism which I admit has sometimes been justifiable.

Second, the experience earlier this year of having had three "Guest Editorials" provided for me, so that I didn't have to write them myself.

And third, I couldn't think of a topic suitable for this month, perhaps because of being "spoon fed" in those earlier months!

Maybe I should add a little more to that third point. I think I should retire from the job!

I became Editor of *Amateur Radio* in May 1984, and in May 1999 I will therefore have completed 15 years in the chair, almost equalling the record of 15 years and two months set by the late Tom Hogan VK3HX, from March 1941 to May 1956.

To set a new record I will need to continue until August 1999. Then I would like to retire!

So, in about one year's time we will need a new Editor. Do we have any offers?

Of course, the Editor does much more than just write "Comments", but an appropriate few paragraphs each month play an important part in keeping you, the members of the WIA, informed about what goes on.

I would like to suggest that anyone "out there" who feels so inclined, might write for us a "Guest Editorial" on any topic of interest to radio amateurs.

Ideally, such a "Guest Editor" should be closely connected with Council or Executive (in 1984 the Editor was a member of Executive, as specified in the 1972 Articles of Association, but this was changed some years ago).

Such a connection is not vital, as on any matters of fact, policy or management, the Executive will retain the right to approve or modify if necessary. It seems to me that most Divisional Councillors (including Presidents) and most Federal Councillors and Directors should be able to write the occasional Guest Editorial; but this should not exclude any member who feels editorially inclined.

And, who knows, you might become the next Editor of *Amateur Radio* into the bargain!

Bill Rice VK3ABP

Editor

PS. I don't expect to be killed in the rush!

ar

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

“Stop Press” Comment

In the August edition of *Amateur Radio*, there appeared on p 45 a statement from the Victoria Division of the WIA under the heading “Stop Press”.

The Federal Executive wish members to know that they have referred back to Federal Council for further consideration the matter of privileges for certain grades of licence that was the subject of a recent postal vote by Councillors.

The Executive are concerned that the motion in its present form has the potential to discourage membership and support of the WIA by a large body of licensed amateurs. In the meantime, action by the Executive on this matter will await the outcome of the Council's deliberations.

[Peter Naish, Federal President]

ar

Prize for Young Outstanding WIAQ Member

Fifteen year old Adam VK4LAD is now the holder of full call VK4AJF, AND has been awarded, in recognition of his diligence, the Fluke Model 12B hand-held digital multimeter, worth \$195.

This is the prize donated by Roberta (Bobbi) KB9GKX, a USA WIAQ

member for a **Young Outstanding WIAQ Member**. Roberta Barmore KB9GKX of Indianapolis, Indiana became a member of the WIAQ and picked up the multimeter in the 1997-98 WIA recruitment drive organised by Roger Harrison VK2ZRH.

Fifteen year old Adam VK4AJF was awarded, in recognition of his diligence, the Fluke digital multimeter, at a recent function at Southside Amateur Radio Club.

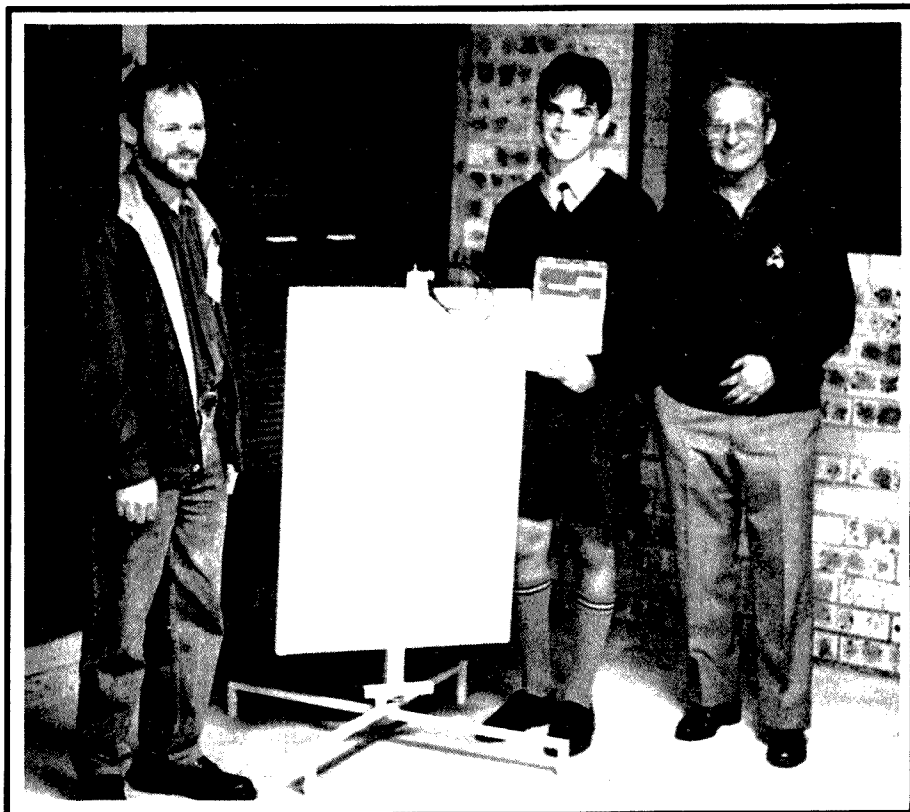
WIA QNews Editor, Graham VK4BB, presented the award at the clubhouse where along with Adam was his father VK4XYZ and, up from South Australia, his grandfather VK5ETH.

ar

RF Radiation and Health Safety

It has recently been announced that the Australian and New Zealand Standards Associations have adopted a new “Interim Joint Standard” to be considered by the Australian Government as a requirement for radio transmitter installations. Amateur operators may be interested in this document, AS/NZS 2772.1:1998. It is based on the possible health damage due to the proven thermal effects of RF, while the non-thermal effects on body cells are still being researched.

The problem of possible damage due to RF radiation is a world wide problem. In 1966, the World Health Organisation set up an International EMF Project to research the possible human health effects caused by exposure to Electromagnetic Fields (EMF). EMFs are defined as fields in the frequency range from 0 to 300 GHz. The range has been



A family affair. (l to r) Phil Frankel VK4XYZ (father), Adam Frankel VK4AJF (son) holding the Fluke multi-meter, and Ted Holmes VK5ETH (grandfather).

WIA Call Book 99

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The IC-T8 is an ultra compact tri-bander that is really generating enquiries from enthusiasts. The unit fits in the palm of your hand yet offers a world of features and amazing worldwide reception. You get ample RF power, tone squelch, a pocket beep 'pager like' function, and much more. Be sure to hear this remarkable unit for yourself at your nearest Icom dealer soon.

IN DASH, TWO BAND VERSATILITY

Another unit creating quite a stir in the market place is the IC-207H offering two band in-dash versatility, in one compact value-for-money unit. It provides 2m/70cm capabilities, one band at a time, via a band switching system. The front panel is easily detachable, plus you can connect to a packet modem supporting speeds of up to 9600bps.

Dealer enquiry has been strong so be sure to check it out while stocks are available.

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A warm welcome to the Icom family to Harris Communications, the first Icom amateur dealer in central Melbourne for many years...very handy for those working in the city. Robert Harris has been a licensed ham for 21 years so he has a wealth of experience. He'll be attending as many Hamfests as possible and is planning an impressive mobile display for these events. You'll find his dealership at 78 Elgin St. Carlton, phone (03) 9347 6264 or fax (03) 9347 3629.

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ILL. BY JOHN A. HARRIS

divided into three categories:

- (1) Static Fields (0 Hz);
- (2) Extremely Low Frequency Fields (0 to 300 Hz); and
- (3) Radio Frequency Fields (300 Hz to 300 GHz).

It is this third category which is of obvious interest to amateur radio operators. For those with access to the Internet, the Project's Web site is to be found at <http://www.who.ch/peh/emf/index.htm>.

In the USA, the FCC Office of Engineering and Technology (OET), has done a study of radiation levels in and near amateur radio stations in California. Amateur stations were chosen that represented a variety of antenna and equipment types, as commonly used by amateur radio operators. Measurements of electric and magnetic field strength were made in areas near the amateur antennas and equipment, in order to determine typical and "worst case" exposure levels for amateur radio operators, their families and others, who live or work in the vicinity of these stations.

For frequencies below 7.2 MHz, electric field strength (E), was measured using an Instruments for Industry Model EFS-I field intensity meter. For frequencies above 7.2 MHz, a Holaday Industries Model HI-3001, isotropic, broadband, field intensity meter, was used; a Hewlett-Packard spectrum analyser with dipole antenna, was also utilised. Magnetic field Intensity (H) was measured using a calibrated loop antenna connected to a Hewlett-Packard, Model 435B, power meter.

At most of the stations surveyed, current USA guidelines for field strength and power density were not exceeded in accessible areas. In addition, since the measurements were taken while holding down the key in CW mode, the "duty factor" for normal amateur operation was always exceeded. The highest readings in areas near amateur stations were generally associated with vehicle-mounted antennas.

Commonly encountered field strength readings in accessible areas near antennas and equipment, generally were less than 20 V/m for the electric field and less than 50 mA/m for the magnetic field. For comparison, the USA standard maximum permissible exposure averaged over six minutes, at 14 MHz, is 130 Volt per metre for E, and 1.16 Amp per metre for H (in the 3-30 MHz range the ANSI/IEEE 1992 Standards, are 1842/f V/m, and 16.3/f A/m, respectively, where f is frequency in MHz).

It should be noted that the exposure values are frequency dependent, and therefore the strictest exposure levels are at VHF where, for humans, there is the highest specific absorption rate.

This detailed OET report, which is well worth reading, is obtainable on the Internet at <http://www.fcc.gov/oet/info/documents/reports#ASD-9601>.

The WIA will continue to represent Australian amateurs in the future application of the Interim Australian standard as it affects VK callsigns.

[Dr Vince McKenna VK3AOY]

ar

WIA Regulations Examinations

Several new Regulations Examinations Question papers will be put into use shortly.

As these will contain many questions which have not been used previously, many invigilators may feel that the papers are harder than those previously in use.

Please be aware that this impression is only because you have not seen the

questions previously. Every care has been taken to match the new papers to existing standards. Any comments or queries should go to the WIA Examinations Committee through the Federal Office. If you do this, please provide a contact telephone number.

[Brenda Edmonds VK3KT, WIA Federal Education Co-ordinator]

ar

WIA Call Book 99

The essential reference book for all amateurs!

Radio Operators Wanted for the 1998 ISDE 10 - 15 November 1998

What is it? ISDE stands for International Six Day Enduro. The ISDE is the largest World Championship motorcycle sport event run under the control of the international motorcycle sport body, the Federation Internationale Motorcycliste (FIM).

Commonly referred to as the Olympics of motorcycling, the ISDE originated in England in 1913. The event this year will be the 73rd one run, only the fourth time it's been held outside Europe, and the second time in Australia. There are expected to be between 400 and 500 competitors - a large event in anyone's terms.

Only registered and insured motorcycles can compete in the ISDE with the event run through State Forests, using existing forest trails, private property and public roads following an arrowed course in and around the Latrobe Valley.

Riders carry a card and clock-in at controls along the route with penalties for being late or early. The ISDE is not a race as the average speed must be no more than 50 kph.

En-route there are usually two or three sections called *special tests* - a single file Motocross, where riders are timed to one-hundredth of a second - this score being a major factor in determining final positions.

The ISDE is an annual test of reliability of the machine and the skill of the rider, comprising six one-day runs of approximately 300 km each, and on the final day a full scale International Motocross.

The 1998 ISDE will be based at Traralgon in Victoria and will have four routes, two of which will be used twice over the six days of competition. It will be a very high profile event with world-wide media coverage and it is estimated it will bring about \$20M into Gippsland.

WICEN has been asked to provide communications for the event, and this will be mainly logistics and safety traffic. It is not planned to use WICEN for

scoring; organisers will be taking care of their own scoring traffic as there is no need to get the scores quickly to the event HQ (unlike a normal car rally).

Each day of the event, the riders will compete over two laps of a 150 km course, and WICEN has been asked to have operators at each Control Point. These are spread out approximately every 30 km over the loop.

A number of operators will be required at the Traralgon Show Grounds from where the event will be controlled, and also possibly to tag medical response teams, the SES or Stage Commanders. It is estimated that about 30 operators will be required each day for the six days of the event.

What sort of country will the event be run in? There will be stages run in the Erica/Boola Boola/Glengarry area, the

WIA Call Book 99

**Every active radio
amateur needs one!**

Stradbroke sand hills, the Mt Tassie/Carrajung area and also Traralgon South.

Most of these areas already have good coverage from existing 2 m repeaters, but it is envisaged that portable repeaters will be established, especially for the Stradbroke area.

WICEN members participating can expect to have some expenses reimbursed. An area has been set aside at Gormandale for overnight accommodation of WICEN members.

If you would like to find out more details, or participate in this rather rare event, please contact John VK3BAF on 03 9546 4947; Chris on 03 5127 5656 (AH), or 03 5135 5503 (BH); or write to WICEN VIC (Inc) at PO BOX 106, Mitcham VIC 3132.

[Chris Morley VK3KME, Region Q Co-ordinator, WICEN VIC (Inc)]

ar

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■ Equipment Review

Yaesu FT-847 12 Band All Mode HF-VHF-UHF Transceiver

Ron Fisher VK3OM
24 Sugarloaf Road
Beaconsfield Upper VIC 3808

Yes, that's right, twelve bands! All the way from 1.8 MHz through to the 432 MHz band.

Yaesu call it the "Earth Station" and that's a very appropriate name because the FT-847 can operate in full duplex mode for satellite work. Throw in a bit of EME (earth-moon-earth), as well as a full featured HF transceiver, and you start to get the picture.

The transmitter has 100 watts output on all HF bands up to 50 MHz and a healthy 50 watts output on two metres and 70 cm.

Normal filtering for SSB is via excellent ceramic filters but these can be replaced with optional Collins mechanical filters. We will see later just how effective these mechanical filters are.

Of course, this is not the first HF plus VHF and UHF transceiver for Yaesu. Go back a few years and try to remember the FT-767. This was a 100 watt HF transceiver to which six metre, two metre and seventy centimetre modules could be fitted. These modules were sold as options and were not fitted as standard. It had full general coverage receive up to 30 MHz but reception in the VHF and UHF bands was limited to the amateur bands only.

The transceiver was quite large, had a built-in AC power supply and really looked the part. It had a lot going for it, but for some reason it wasn't popular. Perhaps the VHF modules were too low in power at only 10 watts output. Perhaps the whole idea was too early. I don't know.

Well, here is the new FT-767, it's called the FT-847, and I predict it will sell like hot cakes.

FT-847 Features and Facilities

The FT-847 is a compact but not miniature transceiver. It is almost a third of the size of the FT-920 and roughly the same size as the old FT-757 and 747 transceivers. However, it is a different shape.

It is both wider and lower than the earlier models and this, in isolation, makes it appear much larger than it actually is. Finished in jet black (that must be the "in" colour at the moment) with a blue illuminated display, the FT-847 looks very smart indeed. The overall size is 260 mm wide, 86 mm high and 270 mm deep. The total weight is 7 kg.

The FT-847 requires an external 13.8 volt power source rated at 22 amps. As we shall see later, the maximum current drain recorded is 20 amps so your standard 20 amp supply should do the job. All of my on-air testing was done with a Yaesu FP-707 power supply and

this worked very well. My bench testing was done with a Dick Smith D-3800 25 amp supply.

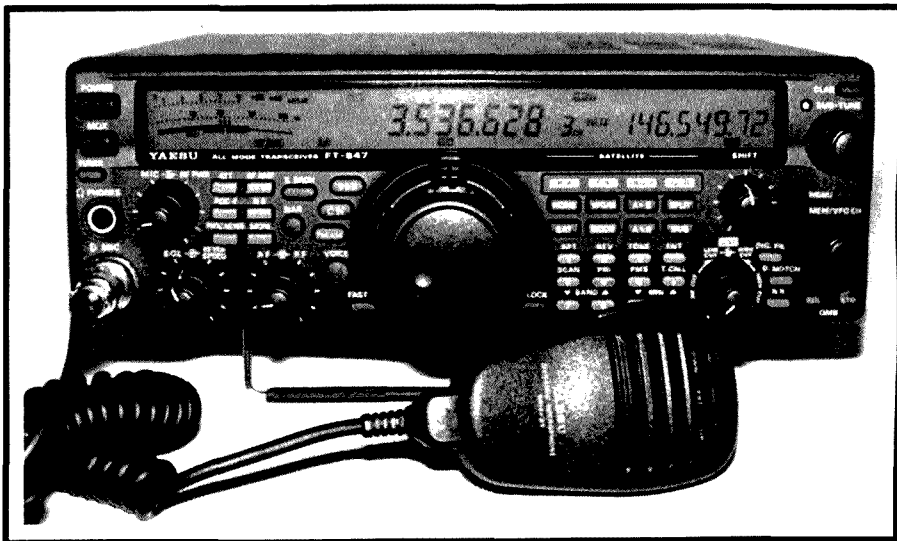
The receiver covers from 100 kHz to 76 MHz, 108 to 174 MHz, and from 420 to 512 MHz. So, in addition to an all band transceiver you also get an almost full coverage receiver.

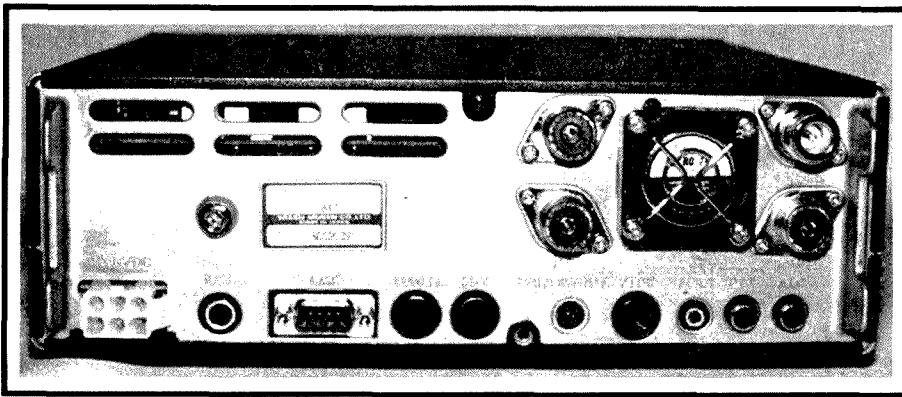
Of course, the transceiver has digital signal processing for the receiver and this works in several different ways. Firstly there is variable digital filtering. Two concentric controls shift the high or low frequency cut up or down the audio band pass. These filters have very steep sides and can really cut interference.

Next is a digital automatic notch filter which can remove heterodynes without the need for manual tuning. For the CW operator there is selectable filtering with band widths of 25, 100, 200 and 400 Hz. There is also a noise reduction setting with adjustable level. To aid all of these in fighting QRM is an IF shift and, of course, those magical Collins mechanical filters for both CW and SSB which are available as an option.

Once upon a time when you bought a transceiver you got a tuning control. Then later they added a clarifier. Later again, with the advent of synthesised transceivers you got variable tuning rates. Well, now you get even more.

The main tuning control has three selectable tuning rates. You can enter frequencies via the front panel key board. There is a VFO channel stepping control. This is mode dependent so you can choose different steps for each. For example you might want 1.0 or 2.5 kHz





Rear panel view of the FT-847. Note the four separate antenna sockets.

steps for CW and SSB, 9 kHz for the AM broadcast band and perhaps 25 kHz steps for VHF FM. Then, of course, there is a good old clarifier although, as we will see later, even this is slightly different.

Then, just to put the icing on the cake, there is Yaesu's wonderful "shuttle-jog-tuning". First seen on the FT-1000MP and then later on the FT-920, this spring loaded ring behind the main tuning control allows for slow, fast and extremely fast scanning up and down the bands. Moving the ring from its central position engages scanning which becomes faster the further the ring is held over. It seems that Yaesu must have a patent on this as it is yet to appear on other makes. It seems that the days of the single tuning control are long gone.

In addition to all of this there are two VFOs and again, carried over from the FT-920, both frequencies are displayed at the same time with the VFO B frequency tuneable independently at any time. As I said with the FT-920, this is not as good as having two receivers but it sure beats the old straight VFO A, VFO B switching.

In order to cope with the wide frequency coverage there are four coaxial antenna feedline connectors, one for HF, one for six metres, one for two metres, and one for 70 cm. The first three are standard SO-239 types and the 70 cm connector is an "N" type which is much more suitable for this frequency. Another nice feature is a dedicated control for a linear amplifier on each of the four band segments.

For the first time in a long time Yaesu are offering a voice frequency read out. I am not sure if they have ever had one on

an HF transceiver before. My research indicates not, but they did have one on the multi-band VHF/UHF FT-736.

The one supplied for the FT-847 is, in fact, the same module. Even the instructions supplied in the box are for the 736. But, no worries, the fitting instructions are explained fully in the FT-847 manual. I seem to remember mentioning in my review of the FT-1000 that this was an obvious omission. Even the HF brother of the 736, the 767, did not have provision for one. Anyway, Yaesu, on behalf of sight impaired operators, thanks!

To help the enthusiastic VHF/UHF operator, Yaesu have provided for 12 volts DC to be fed up the coax to operate a mast head pre-amplifier for both 144 and 432 MHz. This can be switched on and off via the menu. Be sure it's not switched on if you are using an antenna

that is at ground potential such as the popular Ringo vertical.

FT-847 On the Air

The most obvious thing you note when the FT-847 is switched on is the display. It's blue! Not as vivid as the colour advertising photos would have you believe, but quite impressive just the same.

The next thing noticed was the noise of the back panel cooling fan. This runs all the time with a larger internal fan switching on when the transmitter warms up. It's much quieter.

Consulting the menu chart, a few slight changes to tuning rates are suggested and then it's away. Most of the buttons on the front panel are very small and are best operated with a finger nail rather than the finger. Some of them require a fair bit of pressure, too.

The main tuning knob has a rubbery feel but, thankfully, a finger hole has been included. Of course, as mentioned above, there are other ways to zip up and down the bands and, once programmed to your requirements, the VFO/Ch control gets a lot of use.

Audio quality from the internal speaker is satisfactory but a good external speaker does wonders to the sound.

Now to the DSP. The low cut/high cut filter is most effective. This can be switched in and out but, for most of the time, I preferred to leave it in so it could be adjusted at any time. If you have used



The Yaesu FT-847 with the matching FC-20 automatic ATU.

the similarly labelled control on the FT-990 you will note that this one is vastly superior. That's because this one is really digital. The one on the FT-990 was only digital because you used fingers to operate it.

The digital notch filter is also impressive in the way it operates. Pity there is no manual notch filter for CW operators but I guess there is a limit to what can be fitted. Of course, you can overcome most heterodyne problems on CW by using those sharp digital filters which can be taken down to 25 Hz bandwidth. The old reliable IF shift is fitted and this works very well, particularly when used in conjunction with the digital filtering.

The clarifier on the FT-847 needs some explanation. Firstly, there is no offset readout provided which makes it hard to know where you are. If you switch the clarifier off, the offset remains until the main tuning control is changed by one segment. The offset then returns to zero. It takes a while to get used to.

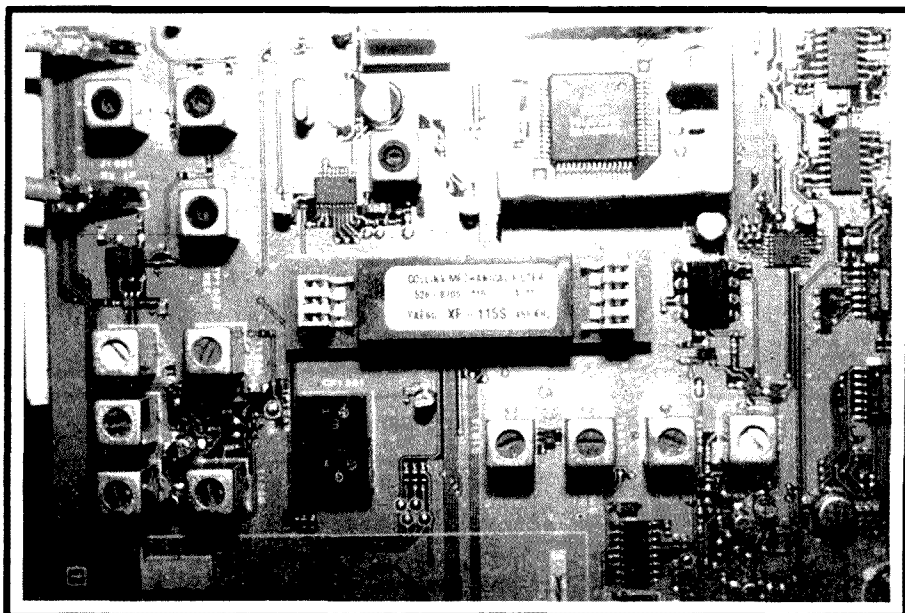
Now it's time to install the Collins filters. As the FT-847 can operate in full duplex mode you need two of these filters, one for the receive channel and one for the transmit channel. Fitting is very easy with no soldering or cutting required. Just remove the bottom half of the cabinet, unplug the ceramic filters and plug in the Collins filters. They can only go in one way so you cannot go wrong. I will leave comments on their performance to John Patterson a little later in the review.

One thing omitted is VOX control for SSB. I must say that I would not miss this at all but I have heard comments from some active DXers that this a drawback when operating in contests with hands-free microphones.

One thing we have become used to in modern transceivers is the memories. The FT-847 has the usual 100 or so channels available.

There are even 12 special memories for satellite operation. There is one (only) quick memory selected and recalled with the two small buttons at the bottom right corner of the front panel

The scanning facilities are quite amazing. For instance, if you are scanning FM memories on two metres, it is possible to program via the menu the



A Collins mechanical filter plugged into the main board in place of the original ceramic filter makes a worthwhile difference to performance (see text).

scanning to restart 3, 5 or 10 seconds after the signal has gone off. Memory channel one can be utilised as a priority channel which is checked every five seconds. Is there anything this little transceiver cannot do?

For transmit tests on SSB and FM, I used both the supplied MH-31B8 hand microphone and my own MD-1 desk microphone. Both performed very well but in different areas. Most preferred the hand microphone on HF and most preferred the desk microphone on FM. So, that was the way I tended to use them. The RF speech processor was effective providing a small increase in talk power.

It is possible to monitor your own signal via the "Moni" button. Of course, if you want to avoid feedback a pair of headphones is essential, but you will certainly get a good idea of how things sound. This is also handy if you are feeding audio in from, say, a tape recorder or other external source. You will be able to hear what is going on.

One thing noted when operating two metre FM was some slight pager interference when the pre-amp is switched on. Now, I am not in an area where this is normally a problem so the interference might well be worse in a built up area. Switching the pre-amp off eliminated the problem at my location and there was still plenty of sensitivity for normal FM operating.

FC-20 Automatic Antenna Tuner

The FC-20 is a matching antenna tuner for the FT-847 transceiver and covers the HF bands and 6 metres. It is enclosed in a plain but attractive cabinet with a plastic front panel that has a bow window effect. The rear panel has a small cooling fan, an input SO-239 connector and two SO-239 output connectors. The front panel is even more Spartan with one small LED indicator and a very small push-on switch to select either output coax connector. A connecting cable is supplied to run to the dedicated socket on the FT-847.

The ATU is an unbalanced to unbalanced type, that is coax in and coax out. It is not suitable to use with balanced line feeders.

The only antenna I have that I could use to test the AT-20 is an 80/40 metre trap dipole which has a rather high SWR on 20 metres.

The AT-20 coped with this in short time, however there is one small problem. Neither the FT-847 nor the FC-20 has an SWR meter so you will need one in between the two units to see what is going on. The FC-20 is switched from the "Tuner" button on the front panel of the FT-847. The FC-20 is priced at \$649.

I also note that Yaesu have a multi-band mobile antenna available, called the ATAS-100. It is designed to operate on 7, 14, 21, 28, 50, 144 and 432 MHz. The

tuning is motorised with the control voltage fed through the coax line from the transceiver. Sounds very interesting.

FT-847 On Test

Once again I want to thank John Patterson VK3ATQ for his expert evaluation on the VHF and UHF performance of the FT-847. John's report includes a lot of on-air evaluation but I have decided to include it all in the "Test" section to maintain the continuity of his report. Over to John.

The following noise floor measurements were obtained using a noise source traceable to National Standards.

	Pre-amp	Out	In
6 m (50.110 MHz)	9.3 dB	6.0 dB	
2 m (144.100 MHz)	3.5 dB	1.6 dB	
70 cm (432.100 MHz)	3.6 dB	1.2 dB	

The above noise floor measurements translate to the following sensitivity ratings, assuming an SSB bandwidth of 2.4 kHz:

	Pre-amp	Out	In
6 m	-130.9 dBm	-134.2 dBm	
2 m	-136.7 dBm	-138.6 dBm	
70 cm	-136.6 dBm	-139.0 dBm	

The sensitivity figures are more than respectable in the case of 2 m and 70 cm, and a little on the low side for 6 metres.

The on-air testing was done using the 50.057 and 144.474 MHz VK7RAE beacons. A/B testing was done using a coax switch in the antenna line to alternate the feed between the reference receiver and the FT-847.

On six metres I was unable to utilise the full sensitivity of the FT-650 reference receiver due to a power line leakage. However, the FT-847 did acquit itself well even if the sensitivity was not quite up to the reference receiver sensitivity (2 dB noise figure).

With the Collins mechanical filters installed, the audio was unbelievably crisper and cleaner than the FT-650. There was no noticeable ringing or hollowness in the recovered audio when using the SSB setting and, when the DSP bandpass filtering was turned on, the overall crispness remained. This is probably due to the combination of the Collins filters having a very low pass band ripple and also a more "linear phase" response. Feeding the unadulterated (filtered by the Collins SSB filter)

IF down stream to the DSP certainly helped the DSP perform better than others I have tested. With the 25 Hz bandwidth setting I did notice some VERY weak (hardly audible) drifting birdies.

On SSB the rig received outstanding reports on the transmitted audio. This was not the case with the ceramic filters installed. The reports with the ceramic filters were that it was "just another rig".

The speech processor, when activated, did very little to improve the "punch" of the signal. Reports from distant stations (400 km plus) indicate that the FT-650 processor is still miles ahead in the "punch" stakes.

On two metres the FT-847 sensitivity was excellent and it performed well ahead of my reference receiver (an Icom IC-275A, noise figure 1.5 dB). Even though there is very little difference in the sensitivity figures between the two rigs, the clarity and crispness of the FT-847 was outstanding and tended to make the same signal much more readable than on the IC-275.

Yaesu have obviously taken a lot of trouble to allocate the gain distribution within the FT-847 as the receiver is very quiet when there is no signal present (ie no audio hiss generated from unfiltered later IF stages and audio stages; also,

the local oscillator/synthesiser appeared not to contribute any noticeable noise).

I did not carry out on-air tests on 70 cm but could probably assume the same characteristics for this band.

All the usual DSP notch and high/low cut filters worked as well as other brands. However, the noise reduction did not produce a noticeable improvement in readability.

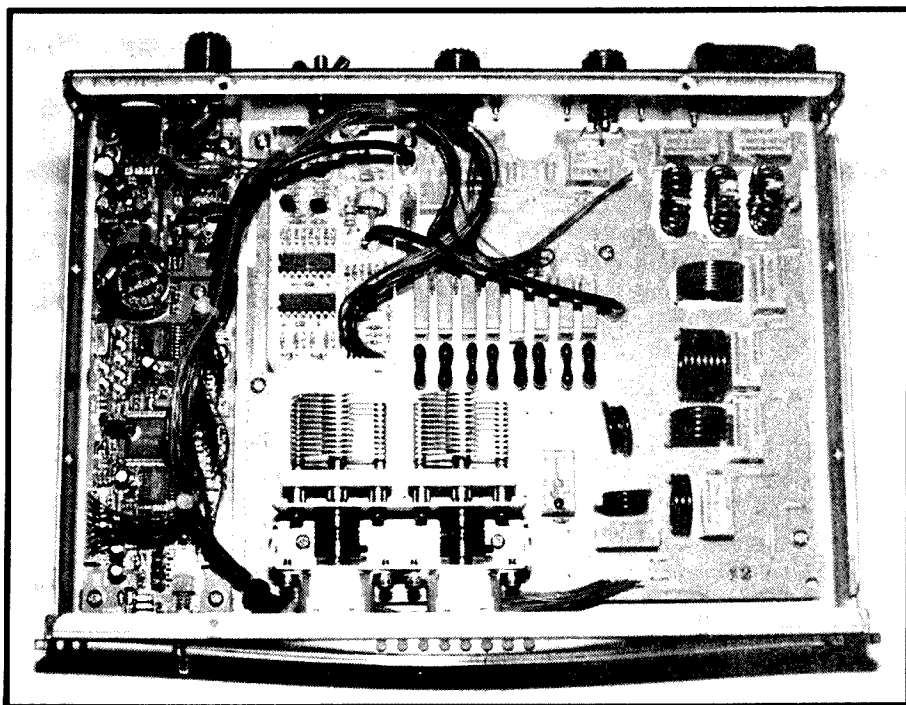
Overall, I would say that this is the first transceiver to come out for some time that I could say was fit for the purpose on VHF/UHF.

Thanks, John, for your comments. Now, on with our usual tests.

First, transmitter power output and current drain, band by band:

1.8 MHz	110 watts	18.5 amps
3.6 MHz	115 watts	17.0 amps
7.1 MHz	105 watts	18.0 amps
10.1 MHz	103 watts	16.0 amps
14.2 MHz	100 watts	19.0 amps
18.1 MHz	100 watts	16.0 amps
21.1 MHz	100 watts	19.5 amps
24.8 MHz	95 watts	20.0 amps
28.5 MHz	97 watts	17.5 amps
29.5 MHz	95 watts	19.0 amps
50.1 MHz	97 watts	16.0 amps
145 MHz	50 watts	11.0 amps
432 MHz	49 watts	12.0 amps

The above figures were taken in the CW mode with a supply of 13.8 volts.



Inside view of the FC-20 automatic ATU.

The same output could be expected in the FM mode. PEP output on SSB would be just a shade higher, ie about 2%.

The next test was to check the transmit intermodulation distortion for SSB. This is the stuff that produces sideband splatter. Better than average amateur transceivers should produce figures of around -40 dB. Top quality commercial equipment will do slightly better than this. Let's see how the FT-847 makes out.

The tests were carried out on 3.5, 14 and 28 MHz. Unfortunately, I was unable to check the VHF and UHF bands due to lack of suitable equipment. However, we are working on this. Commercial testing usually gives figures for 3rd and 5th order distortion. My testing cannot differentiate between the two so the figures are the sum of the two:

3.6 MHz	-20 dB
14.2 MHz	-15 dB
28.5 MHz	-15 dB

I suspect that the higher bands would produce similar results. I did find that the figures improved quite a bit with lower power output. However, these figures are, unfortunately, not in the top class.

Transmit SSB frequency response measurements were interesting. Although there is a sharp cut off in the low frequency end, the audio quality was acceptable. It would be possible to change the high/low balance by adjusting the transmit carrier point (Menu No 92 and 93) but I found the default setting produced the best balance using the supplied hand microphone

Receiver Tests

The first test on the receiver was at the audio end. The output impedance of the FT-847 is specified as 8 ohms, so my Marconi output meter was set to this and connected to the extension speaker socket of the transceiver.

Maximum output was 2.9 watts, but with plenty of distortion. The specified output with 10% distortion is 1.5 watts. At this power I measured only 1.25% distortion. The 10% reading did not come up until 2 watts was reached. At a normal listening level of around 100 milli-watts the distortion had dropped to 0.45% which is as low as I have ever measured.

The audio gain control had an unusual characteristic. For the first quarter rotation nothing happened and then the

output came up in steps. The minimum output measured was 2 milli-watts (quite loud into a good speaker); the next step increased 10 dB, then 5 dB and then in 3 dB steps up to full output

For the broadcast listeners out there, I checked the response on AM. This was done with the usual 30% modulation:

100 Hz	-5 dB
200 Hz	-1 dB
300 Hz	0 dB
500 Hz	0 dB
1.0 kHz	0 dB
2.0 kHz	-2 dB
2.5 kHz	-3 dB
3.0 kHz	-5 dB
4.0 kHz	-9 dB

While this might not please a dedicated hi-fi buff, it will, none-the-less, produce quite pleasing audio with a good speaker.

SSB bandwidth was measured with both the ceramic filter and the Collins mechanical filter. It is interesting to note that the Collins had a slightly wider -6 dB response than the ceramic filter. The ceramic filter bandwidth was 2.4 kHz and the Collins was 2.7 kHz. This was possibly the reason for the crisper sound mentioned earlier by John Patterson.

Next, let's take a look at the 'S' meter calibration for the various bands. I have done a complete calibration for 14 MHz and noted the S9 level for other bands:

Meter Reading	Input Required (Pre-amp Off)
S1	2.5 μ V
S3	5.5 μ V
S5	7.0 μ V

S7	25.0 μ V
S9	55.0 μ V
+20 dB	200 μ V
+40 dB	700 μ V
+60 dB	5.8 mV

Now for S9 readings on each band:

Band	Input Required
1.8 MHz	100 μ V
3.6 MHz	85 μ V
7.1 MHz	92 μ V
10.1 MHz	55 μ V
14.2 MHz	55 μ V
18.0 MHz	60 μ V
21.0 MHz	65 μ V
24.0 MHz	60 μ V
28.0 MHz	60 μ V
50.0 MHz	30 μ V
144.0 MHz	40 μ V
430.0 MHz	40 μ V

All of the above measurements were done in the SSB mode. For FM on VHF frequencies the readings are much more generous with decibels about 0.2 of their usual size. Be wary of giving signal reports on antennas to your friends using the normal HF S meter calibration.

Receiver sensitivity was checked and was found to be in excess of the specification right throughout the range. As an old aviator I was very interested to see how the aircraft band shaped up. I loaded a few of the local frequencies into memory and did some A/B switching between the FT-847 and my usual receiver. It was no contest, the Yaesu won hands down. My usual receiver is a Kenwood R2000 fitted with a VHF converter, and a somewhat off-resonance two metre antenna was used

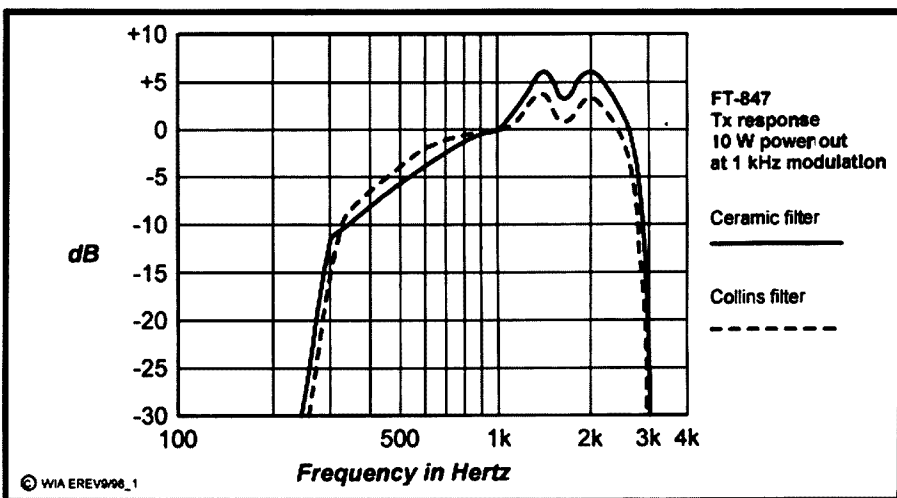


Fig 1 - SSB transmit frequency response measurements.

FT-847 Operating Manual

There is no doubt that Yaesu are producing the best manuals in the business. The FT-847 manual covers subjects that you will not find readily anywhere else.

For instance, there is a chapter on "high-speed CW meteor scatter operation". How about trying a bit of EME operation? All the basics are covered right here in your FT-847 manual. Of course, you will need to be a dedicated VHF/UHF enthusiast to make a start but I am sure there are a few of you out there. Reading this book just might start you off.

There is a lengthy chapter all about the 'Menu' system. However, to simplify things, Yaesu have supplied a laminated concise single-page guide to the menu system. You will be able to keep this handy, perhaps in your log book for quick reference

Operating and installation are covered in a very comprehensive way and, by the way, Yaesu have supplied a full circuit diagram and a block diagram. Now, if only the book had a better quality cover I would vote it the best instruction manual around.

FT-847 Conclusions

I have to vote the FT-847 the transceiver of the year. It is well in the running for the best transceiver of the decade but we will have to wait a couple of years to find the answer to this one.

The FT-847 is in a class of its own at the moment. At the current price of \$2995 it represents unbeatable value. Just look at what you get. First off, a top line HF transceiver with all mode operation. Next, a tri-band VHF/UHF transceiver with all mode operation, and finally a receiver with coverage from 100 kHz to above 500 MHz.

Add all of those up in separate units and my guess is that you would be spending around \$10,000.

If you do decide to buy an FT-847, do yourself a favour and put in the Collins filters. They are not cheap at around \$200 each but very worthwhile.

My thanks to Dick Smith Electronics for the loan transceiver. All enquiries should be directed to them. I would also like to thank John Patterson VK3ATQ for his help in preparing this review.

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■ In the Workshop

A Simple Sheet-Metal Bender

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New Column

Nowadays, we no longer have to build our own radio equipment. If you have the cash, a multi-band transceiver and all the necessary additional equipment (including antennas) may be purchased off-the-shelf. And if you do not have much money, then quite good radio equipment may be obtained second or third hand. So, what's the point of home-building radio gear?

It must be remembered that ours is basically a technical hobby (some might say vocation). It is in our own best interest, and of society at large, that we should have a pool of persons who, in addition to their operating prowess, are skilled in the various branches of radio craft.

Not least of these is an ability to make or repair things. Moreover, time spent in the workshop also offers relief from care, with the pleasing reward of actually producing something of lasting personal value with our hands and brain.

Hence this new bi-monthly column. In future issues we hope to have a look at such topics as metalwork for radio electronics, construction techniques, interesting faults and solutions, making and applying test instruments, photos of member's finished projects (for "show and tell", and to enthuse others), coils, parts sources, etc and, hopefully, re-print some classic articles from other journals.

But please don't make me do all the talking! Let's hear if you have something useful to share. Circuits, troubleshooting tips, photos, tricks of the trade, parts sources. Send them to me at the address shown. All contributions will be acknowledged.

Simple Sheet-Metal Bender

Here are details of a home-fabricated bender which should suit many of the routine light bending jobs around the amateur's workshop. Because of the nature of things, off-the-shelf and scrap

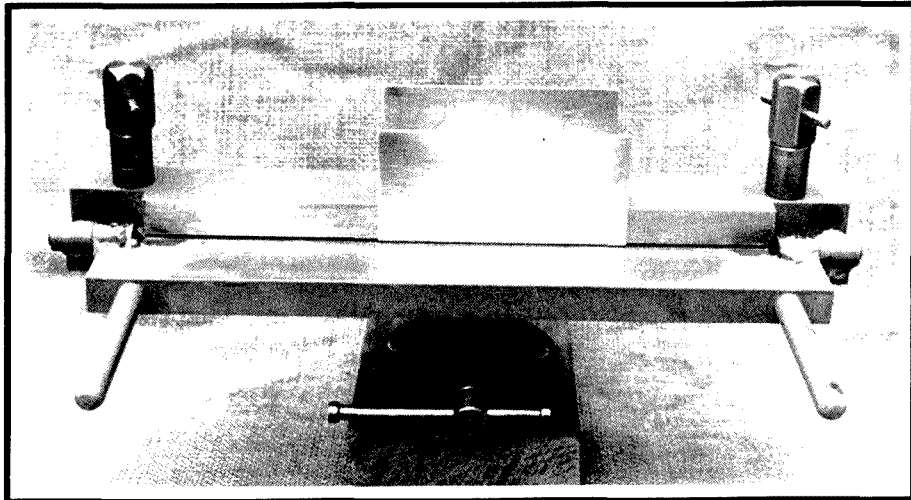
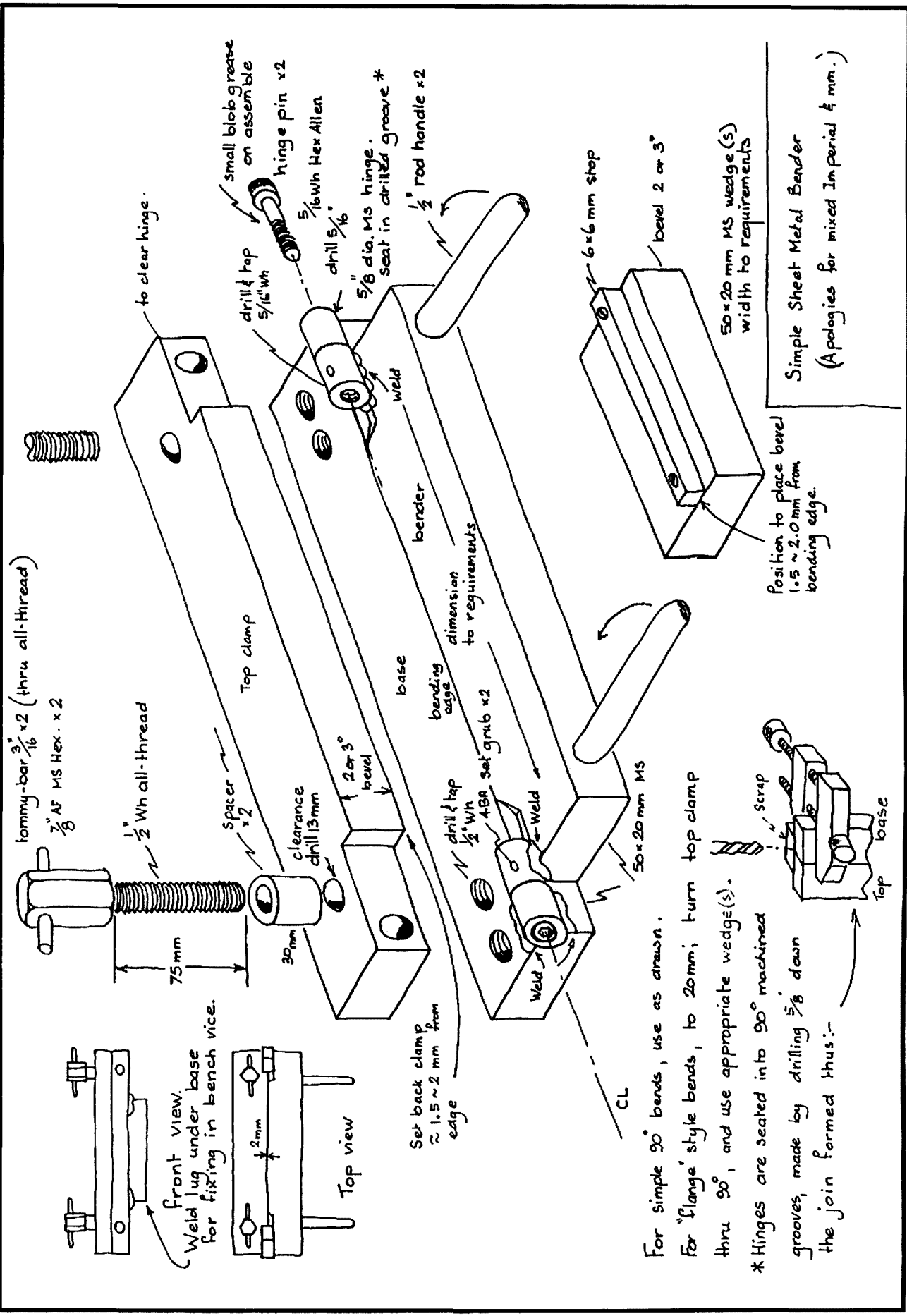


Photo 1 - Plain right-angled bends are obtained by using the top clamp.



Simple Sheet Metal Bender
(Apologies for mixed Imperial & mm.)

For simple 90° bends, use as shown.
 For "flange" style bends, to 20mm; turn top clamp thru 90°, and use appropriate wedge(s).
 * Hinges are seated into 90° machined grooves, made by drilling 5/8" down the join formed thus:-

Position to place bevel 1.5 ~ 2.0mm from bending edge.

50 x 20 mm MS wedge(s) width to requirements

6 x 6 mm stop
 bevel 2 or 3°

Set back clamp ~ 1.5 ~ 2 mm from edge

bending edge dimension to requirements

to clear hinge.

drill & tap 5/16" Wh
 hinge pin x 2
 5/16 Wh Hex Allen
 drill 5/16"
 5/8" dia. MS hinge. seat in drilled groove *
 1/2" rod handle x 2

Tommy-bar 3/16" x 2 (thru all-thread)
 3/8" AF MS Hex. x 2

1/2" Wh all-thread

Top clamp

Spacer x 2

30mm

clearance drill 13mm

2 or 3° bevel

base

bender

weld

drill & tap 1/2" Wh

4BA Set grub x 2

Weld

50 x 20 mm MS

CL

Scrap

Top base

front view.
 Weld lug under base for fixing in bench vice.

Top view

2mm

box materials for instance, both metric and Imperial measurements are used. I apologise if this irritates you.

A bending width of about 12 inches (305 mm) was chosen because, upon placing a rule to my recent projects it was shown that a bender of that capacity would have done the job. Plain right-angled bends are obtained by using the top clamp as shown in Photo 1, and "flange" style bends, typical in box construction, are obtained by rotating the top clamp through 90 degrees and using an appropriate wedge or wedges, as shown in Photo 2. My wedges are (arbitrarily) 2" (about 50 mm), 4" (about 100 mm) and 8" (about 200 mm), and are shown in Photo 3.

By using wedges singly, or in combination, various widths can be accommodated. For bends that are slightly longer than a wedge, or combination, it is not necessary that the full width of the bend be supported; gaps of less than about 20 mm are not usually a problem. Of course, additional wedges can be easily made as need arises. The complete outfit is shown in Photo 4.

Rectangular section MS bar, 50 x 20 mm, was used for the three main components, which are base, top clamp, and bender. To produce nice sharp corners, the bending edge must bear directly upon the material with minimal gap, so the hinge axis must therefore pass along the bending point. The hinges are made from 5/8" diameter MS rod. The segments are each 1" (25 mm) long.

In the lathe, drill two segments to match the shank diameter of your two high-tensile hex Allen bolts - 5/16" is suggested. The other two segments are drilled and tapped to suit the bolts. Drill and tap each of the threaded segments as shown for a 4 BA or M5 recessed grub set-screw, which lock and prevent the hinges from loosening during use.

Fabricate the top clamp, base, and bender components as shown in the drawing. To counter the spring effect when bending sheet, the top clamp and wedges should be filed or milled to a slight bevel of about three degrees. Drill the four top clamp bolts to tapping drill size first. Then, to preserve alignment accuracy, align the top clamp onto the base, and "spot-drill" through for the two configurations. The relative position of

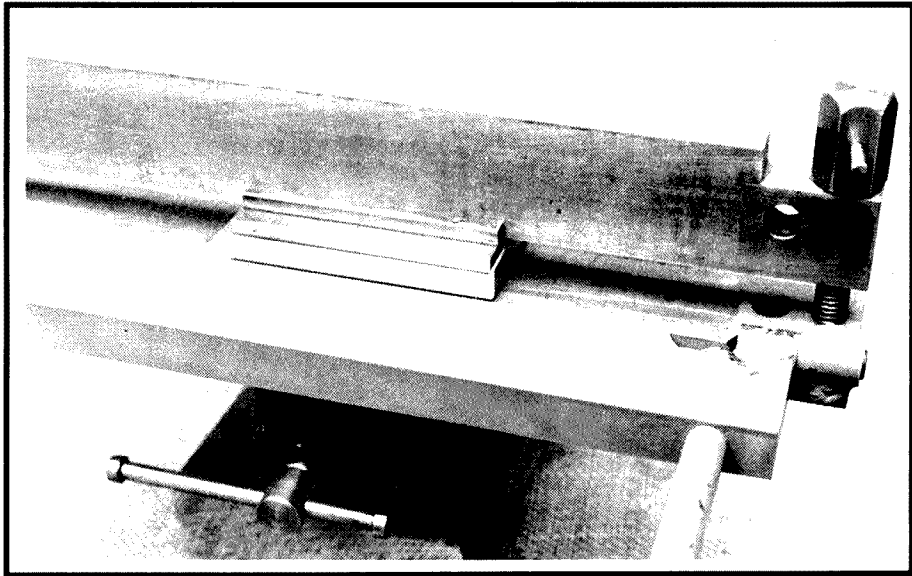


Photo 2 - "Flange" style bends, typical in box construction, are obtained by rotating the top clamp through 90 degrees and using an appropriate wedge or wedges.

the holes is shown pictorially. Actual placement depends upon individual choice, but remember to offset them by an appropriate distance so that they don't clash - 5 or 10 mm is suggested. If using 1/2" Whitworth all-thread for the clamp bolts, clearance drill the top clamp holes to 13 mm. Drill and tap the corresponding holes for the clamp bolts in the base.

I don't have a mill; so, how to machine the seats for the hinge segments? The answer is to use the drill press. The top clamp, base, and a scrap of the 20 x 50 bar is firmly fixed with engineer's clamps (shown in the drawing) and an additional G-clamp (not shown) at right-angles to the engineer's, and the assembly is clamped to a right-angle bracket fixed to

the drill table which is moved to one side. The bottom of the assembly must rest upon the lower drill table. Use suitably sized chocks if necessary.

Carefully check that the assembly and drill axis are truly in-line. In stages, drill to 5/8" diameter, 2" depth to accommodate the hinge(s). The additional depth of the seat cut-out (which, perforce, results in the bender component) may be used to advantage later as an extra place to weld, and thus improve the strength of the hinge. Drill the holes for the two handles, which may be welded, or preferably, interference-fitted into the bender.

When ready to weld the hinge segments, align and clamp the hinge assemblies, complete with hinge bolts

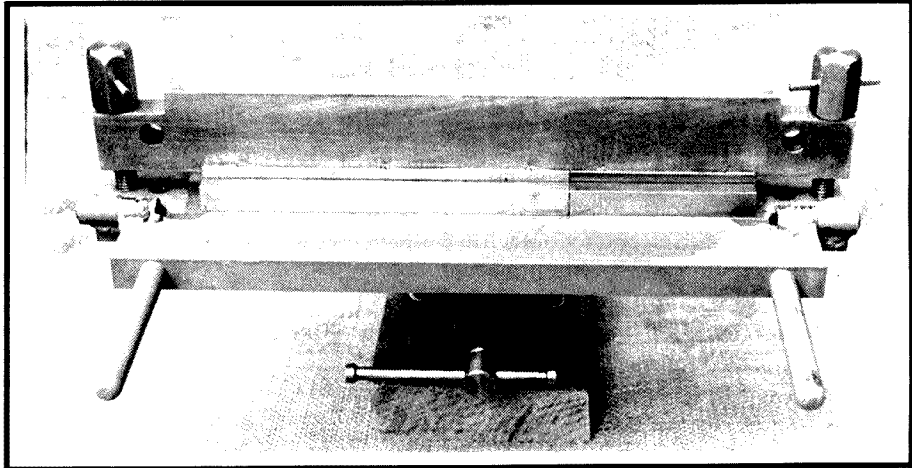


Photo 3 - My wedges are (arbitrarily) 2" (about 50 mm), 4" (about 100 mm) and 8" (about 200 mm).

inserted (dry) into the base and clamp as shown. Tack-weld the segments first, then test that the bender operates smoothly through 93 degrees. If satisfactory, weld the segments in position. Keep in mind at all times which parts need to be able to rotate and come together in operation.

The heads for the clamp-down bolts are made from $\frac{7}{8}$ " AF hex MS. A length of about 2" (50 mm) each is suggested. In the lathe, drill tapping size to about $1\frac{3}{4}$ " (45 mm) depth (that is, not right through). Tap to suit your all-thread. Now, with the all-thread fitted; clamp the job in a machine vice, then cross-drill, through the head and all-thread, to accommodate the tommy-bar as shown. Hint; drill a small pilot hole first, then follow with a drill which is just one or two thou under the diameter of your tommy-bar.

Now, from one side, with a drill of exactly tommy-bar diameter, drill to a depth about 3 mm short of half way (use the depth-stop on the drilling machine to prevent the drill going too far). Reverse the job and do the same from the other side of the head. Drive the tommy-bar through the hole. The under-size segment in the middle will hold the tommy-bar firmly in place, and also prevent the all-thread from turning in the head. In actual operation, a $\frac{7}{8}$ " AF spanner should be used to pinch up the clamp bolts after hand tightening.

The two 1" (25 mm) spacers are optional. Without them, in plain bending there would be rather a lot of thread projecting below the base, so a pair of spacers saves adjustment time. In the lathe, drill to all-thread clearance (13 mm) for each spacer.

Weld a suitable lug onto the underside of the base for fixing the bender in your bench vice (but please read-on). Upon assembly, apply a blob of grease to the shanks of the hinge bolts. Pinch up the hinge bolts just sufficient to obtain smooth operation consistent with minimum lash. Now tighten the hinge set-screws. Place one or two centre punch marks immediately adjacent to the set screws to cause some hinge metal to spread across the top of the grub, thus locking them in place.

As mentioned, the wedges were chosen to suit my past and projected

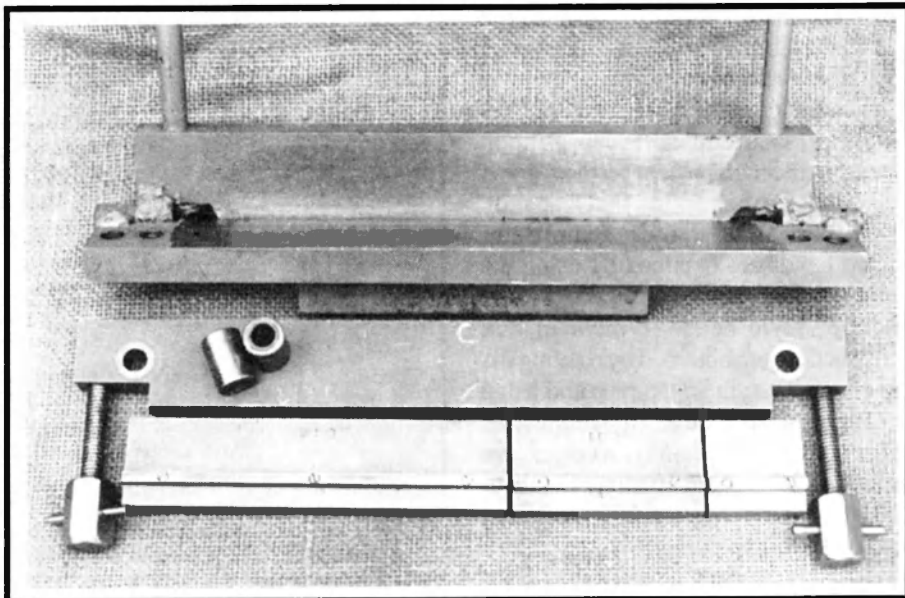


Photo 4 - The complete sheet-metal bender outfit.

work. However, they may be made to any reasonable preferred height and width, depending upon your particular application. The stops are necessary to restrain the wedges from being forced backwards during bending; the clamp alone is incapable of preventing this undesirable effect. The stops may be fixed with screws (as shown), or welded on the front side.

A couple of things that I wish I had thought of during construction. Most of the aluminium and brass I bend is in the range of perhaps 1 to 2 mm. As you can see, there is no adjustment for material

thickness. In the wedge configuration, two ranges of thickness may be had simply by off-setting the top clamp bolts by an appropriate amount, and turning the top clamp around in actual use. Secondly, the vice lug under the base could be made to extend the hull length of the base, thus providing extra strength, and resistance to bowing of the base during heavy bends. But note, do not weld the full length of the lug, just apply three or four equally spaced welds, otherwise the base may be distorted.

Finally, a safety hint: Once, when lifting the machine out of the vice, the bender accidentally flopped down and closed on my fingers, which naturally were underneath. No damage was done, but it hurt a bit. When inserting or removing the device therefore, make sure that the bender is in the down position, and keep fingers away from the bending edges.

This project was first published in Journal #44 of the Melbourne Society of Model and Experimental Engineers.

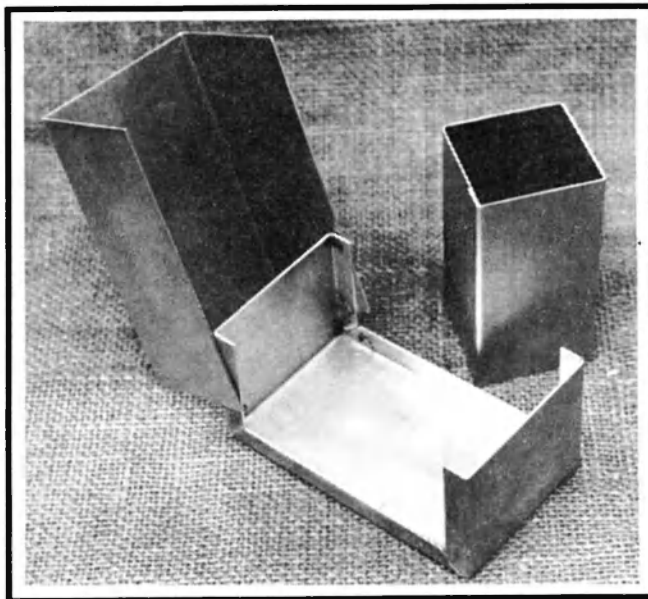


Photo 5 - Some typical boxes.

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Technical Abstracts

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Stripline Directional Coupler

In *VHF Communications* Volume 30, 1/1998, Gregor Storz ZL1GSG/DL2GSG described a stripline directional coupler for 400 MHz to 3.6 GHz.

The coupler used ordinary FR4 PCB laminate in a triplate configuration. Two of the pieces of laminate were used as ground planes with the middle layer having the coupler lines etched on it. A backing plate of 2 mm thick aluminium was used.

The coupler is an asymmetrical design and is shown in Fig 1. The terminating resistors were SMD components. The outer board must be ground away where the resistors are located on the middle board. This is to provide space for the terminating resistors.

The structure of the triplate is shown in Fig 2. The coaxial sockets must have only thin dielectric on the flange side. The discontinuity between the connector and the stripline must be minimised.

The earth contact for the resistors is soldered on all three layers. Each resistor has an earth contact. The resistor earth contacts are pieces of wire which are soldered to each layer of the triplate. There is a row of screws along each side of the coupler assembly used to clamp the assembly and provide connections between the earth planes. The coupler circuit board before assembly is shown in Photo 1 on the next page.

The circuit boards are FR4 2 mm thick. All lines lie on a 5 mil (0.005") basic grid. The lines are 56 mil wide and the coupler segments are 690 mil long. The entire coupler is 88 mm wide. The coupler lines intervals are S1 = 175 mil, S2 = 140 mil, S3 = 120 mil, S4 = 100 mil, and S5 = 85 mil. The gaps are 119 mil, 84 mil, 64 mil, 44 mil, and 29 mil respectively.

The coupling from port 1 to 3 is 20 dB from 400 MHz to 3 GHz, and is +/- 1 dB. This is shown in Fig 3. The directivity from port 2 to 3 is 18 dB or better from 400 MHz to 2.5 GHz, and better than 14 dB to 3.5 GHz (Fig 4).

Matching of ports 1, 2, and 3 is shown in Fig 5. Return loss is 16 dB or better from 400 MHz to 2.5 GHz, and 13 dB or better to 3.5 GHz.

Short Component Leads

A tip for using replacement components with short leads

appeared in the *In Practice* column of Ian White G3SEK in the January 1998 issue of *RadCom*. The idea came from JA4BLC who described replacing GaAsFETs in pre-amps with modern short-lead-length components.

JA4BLC mounted the modern replacement FET on a small carrier board which was then soldered in place of the old FET in the pre-amplifier. The board used was a carrier board 5 mm x 10 mm made from single sided Teflon PCB. The board can be cut with scissors and the required tracks separated using a sharp knife to strip off the copper between tracks. The board is then soldered in place of the old FET. The new GaAsFET is then soldered in place on the carrier board. The carrier board is shown in Fig 6.

Through Board Connections

Connections from one side of a printed circuit board to the other can be troublesome. Modern boards use plated-

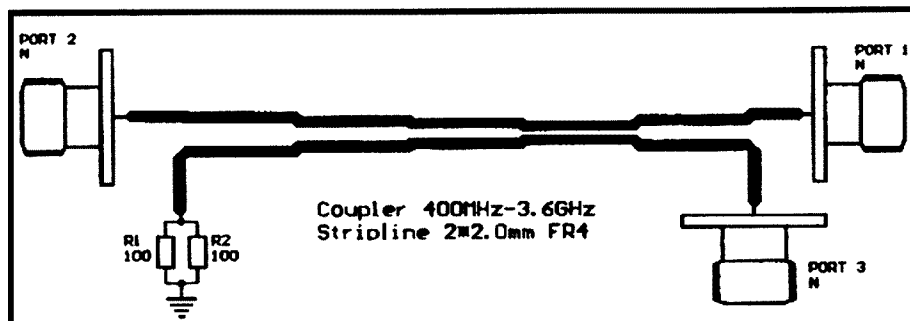


Fig 1 - Wiring diagram of the asymmetrical stripline coupler.

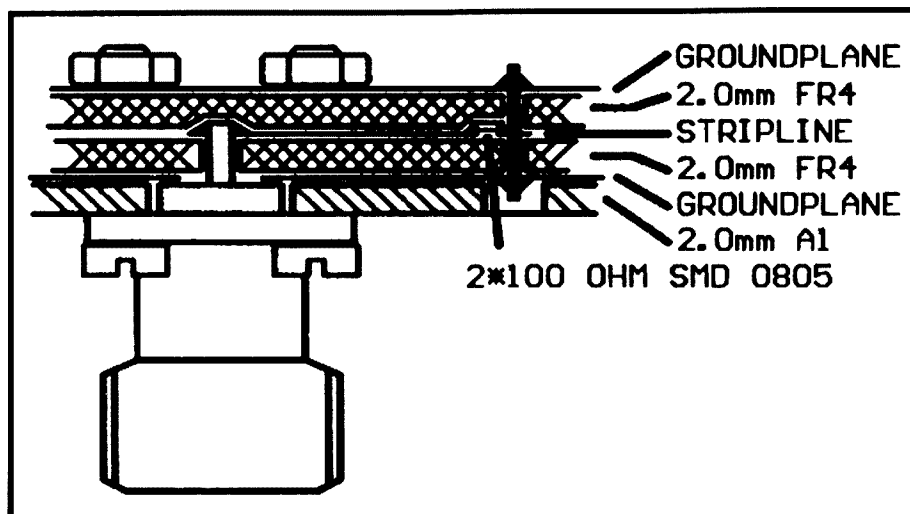


Fig 2 - Structure of triplate with aluminium ground plane, mounted N socket, and soldered-on SMD Resistor.

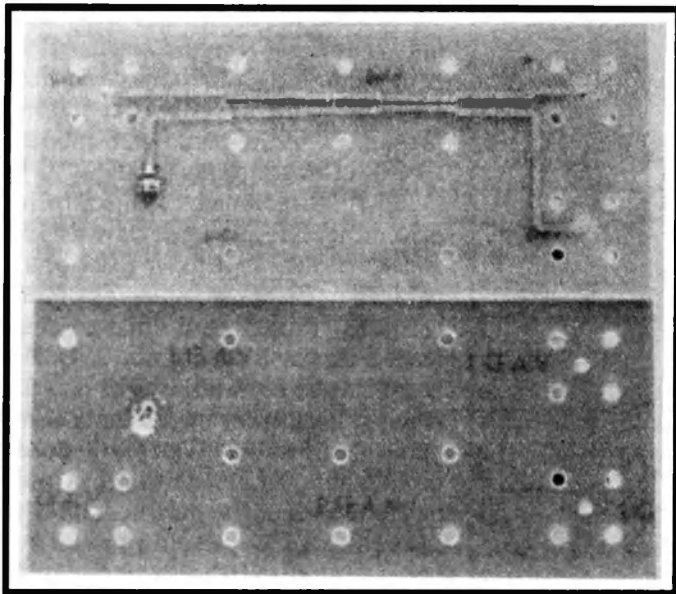


Photo 1 - Coupler printed circuit board before assembly.

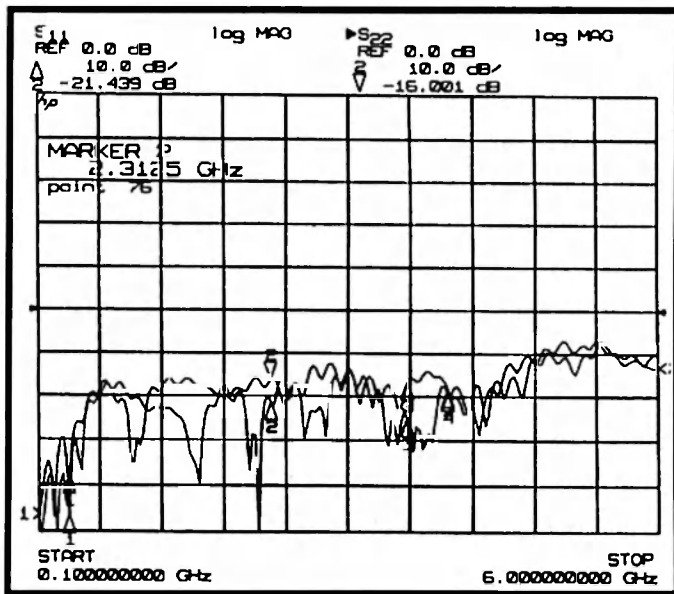


Fig 5 - Matching of ports 1, 2 and 3. 400 MHz - 2.5 GHz Return Loss $> \pm 16$ dB. 400 MHz - 3.5 GHz Return Loss $> \pm 13$ dB.

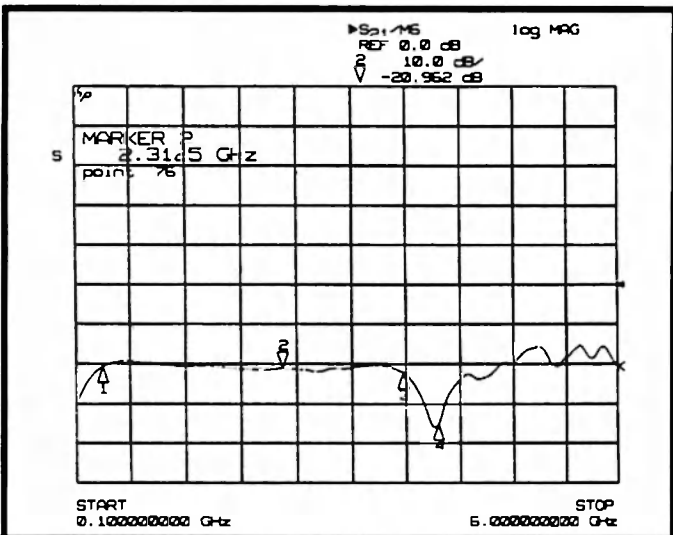


Fig 3 - Coupling port 1 to port 3. 400 MHz - 3 GHz = 20 ± 1 dB. Marker 1 = 400 MHz. Marker 2 = 2.31 GHz. Marker 3 = 3.6 GHz. Marker 4 = 4.0 GHz.

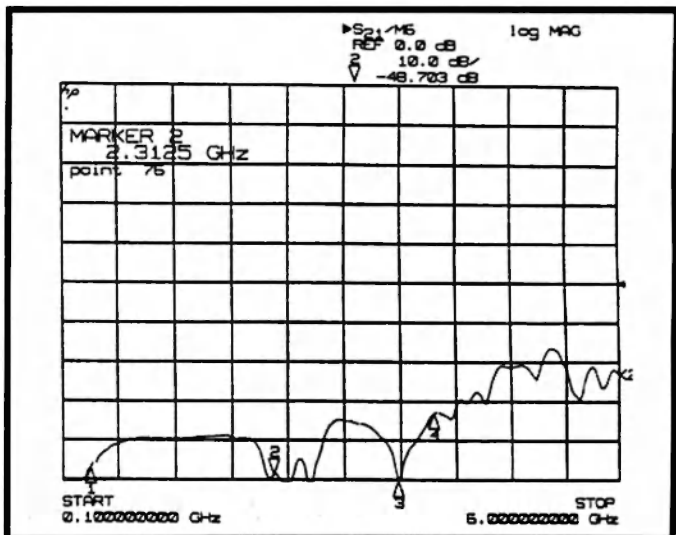


Fig 4 - Directivity port 2 to 3. 400 MHz - 2.5 GHz $> \pm 18$ dB. 400 MHz - 3.5 GHz $> \pm 14$ dB.

through holes which are much better. Old printed circuit boards use pins or even component leads to connect between tracks on opposite sides of the board.

Unfortunately, this can lead to troublesome intermittent connections.

In the *Technical Topics* column of Pat Hawker G3VA which appeared in the July 1998 edition of *RadCom*, a neat way of providing a through board connection was described. The technique was used by G4IBS to replace vias, or through board connections, in older equipment. G4IBS had experienced some tricky intermittents prior to developing this

technique. The technique minimises stress on the wire link used (see Fig 7). The wire is bent as shown and this should minimise the stress due to differential expansion. The bending is more complex but should be responsible for fewer problems.

Simple Output Indicator

A simple output indicator for a Ten Tec transverter, which could be used in other equipment, was described in the *Hints and Kinks* column of Bob Schetgen KU7G in the May 1998 edition of *QST*. The idea came from Roger WA0VLL.

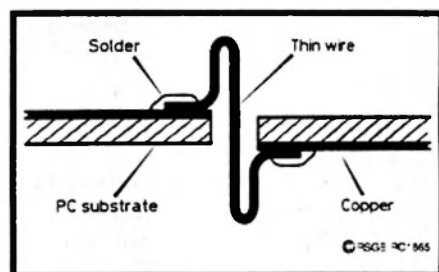


Fig 7 - Via for non plated-through holes in circuit boards.

Roger mounted a small coil connected to an LED close to the output of the transverter. The coil picks up the RF output and lights the LED. Rather similar

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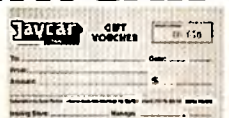
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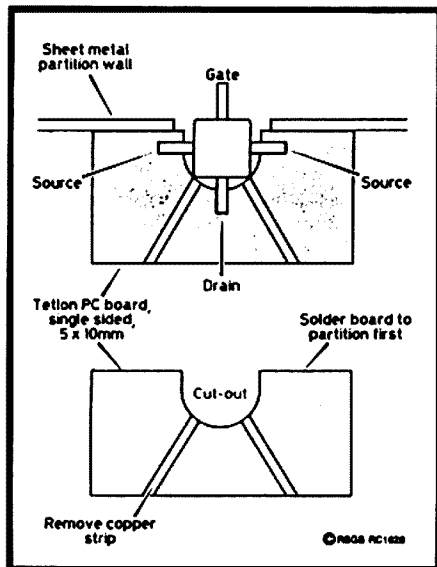


Fig 6 - Carrier board to support short-lead GaAsFETs.

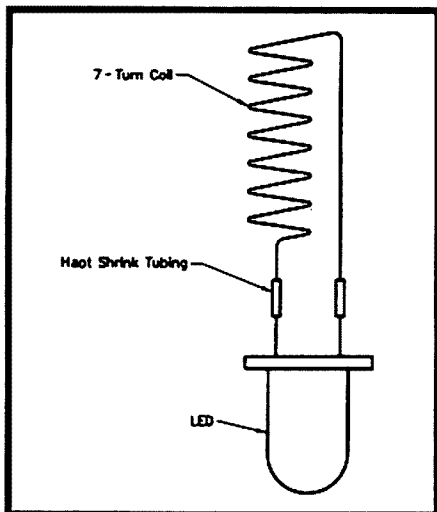


Fig 8 - LED and sense coil.

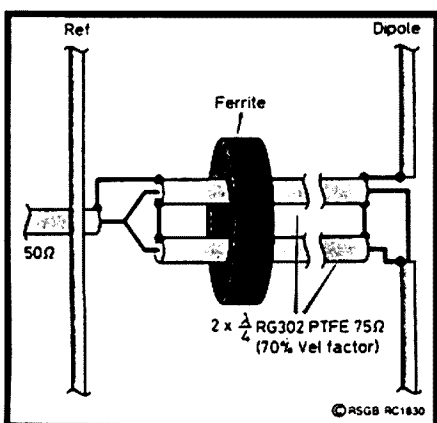


Fig 10 - 144 MHz three element beam matching using a ferrite balun and parallel coaxial matching sections by GW4HBZ.

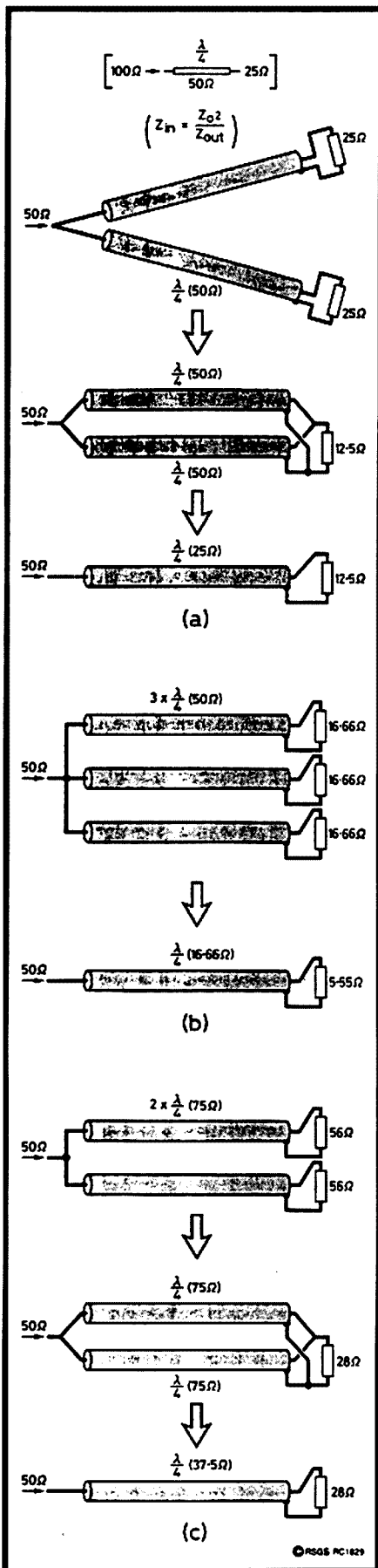


Fig 9 - Using parallel cable lengths for matching.

to the soup loop pickup which old timers used.

The LED and coil are shown in Fig 8. The loop and coil are mounted close to the output of the transmitter. Spacing and orientation must be experimented with so that the LED glows brightly at full output.

Quarter Wave Line Matching

In the *Technical Topics* column of Pat Hawker G3VA in *RadCom* for June 1998, an interesting use of quarter wave matching was described by Brian Clowes GW4HBZ. Brian showed the use of paralleled coaxial quarter wave transformers to match impedances. This technique allows the use of standard coaxial cables to match a wider range of loads.

The technique is shown in Fig 9. A quarter wave section of 50 ohm cable can be used to match 100 ohms to 25 ohms. Paralleling gives a match of 50 ohms to 12.5 ohms. This is shown in Fig 9 (a). Similarly, in Fig 9 (b) three parallel sections are used to give a match of 50 ohms to 5.55 ohms. In Fig 9 (c) 75 ohm cable sections are used to match 50 ohms to 28 ohms.

In Fig 10 the use of the match of Fig 9 (c) is shown being used to match a Yagi. An added refinement is the use of a ferrite sleeve around the matching sections to act as a current balun and achieve a balanced feed.

The technique is capable of further experiment with additional range being possible by using a mix of 50 and 75 ohm cables. The matching should be simpler and less touchy than some of the alternatives, such as tuned matching units and gamma matches. The use of bridge type SWR matching devices, such as the MFJ and Autek units, should give suitable load values on which to base calculations. ar

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■ Repeater Link

Computers, Ugh!

(part 2)

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E-mail: will@vale.faroc.com.au

Great Fun But!

Computers most of the time are great fun. They can work well without trouble, but when they give trouble it can be a most frustrating and challenging experience that chews up vast amounts of time. It is simply because computers are so useful that when they play up it causes such a major hassle.

For the non computer user the comment "I'm having computer trouble" may mean little. So, what does it mean? For me it all started after I saw a demo of a computer game played with the addition of a graphics accelerator card. This is the latest add-on to computers and increases the speed of 3D graphics many times over. The moving 3D pictures are smooth, well textured and light years ahead of a computer without a graphics accelerator card. Once seen, you have to have one to play games written for these cards. So started my particular computer problems with a touch of the X Files.

What follows is a very brief description of several weeks of frustration and disbelief. To go into all the detail would take up far too much space. There are two computers involved, a Pentium 100 and a Pentium II 266, both running Windows 95 as the operating system.

Card 1

Accelerator card number one was purchased and installed in the Pentium 100 and worked for three days. Then games requiring the 3D card would not work. The computer worked but not software requiring the accelerator card. I had changed nothing within the computer.

Often, when faced with this type of problem, the standard approach is to

remove the program software that is not working and re-install it. This generally fixes the problem but, in my situation, it did not.

Re-installing the games had no effect. Next I discovered in 'Control Panel' that the 'Display' icon would not work. A message "Can not open Desk.cpl" was the response when clicking on the 'Display' icon. I then removed the software (drivers) for the accelerator card. The 'Display' icon worked again.

I now knew the problem was with the accelerator card. It is normal to suspect the installation of the software or its configuration. I downloaded the latest drivers for the card from the Internet but still no go. All sorts of software changes were tried, some of them compounding the problem.

It is not unusual, after trying to solve a problem with a computer, to be worse off at the end of the day compared to when you started. It can be dangerous to know enough to fiddle with a computer and I was causing more problems than I was fixing. You sometimes get to such a point of frustration that starting from scratch appears to be your only option.

Big 'Format C Drive'

The big 'Format C Drive' was done. This erases all programs and data from your computer and is only done as a last resort.

You cannot just remove the operating system (in my case Windows 95) and then re-install it, as all Windows programs, like your word processor, share common files and it is very difficult to sort out what belongs to what. Data, like CAD drawings and letters, etc can be saved onto floppy disk, but programs have to be re-installed.

It is most important to save all the information you will require to set up your computer again, such as your Internet configuration.

To reload Windows 95, set up the computer and reload all the software, and the software for the peripherals such as printers and scanners. This can stretch over a few days. Yes, several days!

If you are not doing this often it is a re-learning process. For example, I took several hours to configure my monitor back to 800 by 600, all because I'm not all that bright and the method I kept trying was wrong. Once I found out what I was doing wrong it only took a few minutes.

I'm trying very hard not to say too much about Windows 95 and the way I interact with it. But, to get it off my chest, I do like the concept but why do I find it so difficult and frustrating? The help information is little or no help to me. Where I get lost is not knowing which of several set-ups (all of which could be relevant) is the right one, or which combination is the right one.

I'm sure that people who write computer help files never try them out on the average computer user. I often get lost at step one. OK, that said, let's move on.

After many hours the computer hard disk was rebuilt but still the graphics accelerator card would not work! It was looking like the card was faulty. A quick trip to a friend's computer gave the same results. I returned the card under warranty and awaited a replacement.

Modem Problems

To say the computer was fully working is not quite true. I was having problems with my Internet set-up.

I could connect to my service provider, load the browser and all appeared to be working. However, the first download page stalled. It started to download but then stopped. The modem just sat there.

Having just re-built the computer it was obvious I had not set up my Internet connection properly. Try as I might I could not get it to go past starting to download where it stalled. Could there, by coincidence, be a problem with my service provider? A phone call to a friend who uses the same service provider confirmed that he too was having problems similar to mine.

What bad timing, but at least it was not my computer. However, to be sure, I contacted another friend who also used the same service provider and, yes, he too was having problems. I rang the service provider and they said there might be a problem but did not think so. They would look into it.

Time went by but still no Internet. I had arranged with a friend to play a computer game direct, phone line to phone line, no service provider, and I had similar problems. The game connected, started and then stalled!

So it was not my Internet connection but a problem with my computer. This situation goes way back to having the need for two extra COM ports on my computer, COM 3 and COM 4. I could never get them to work properly but, with the rebuild, they appeared to work (yes, I know about interrupt conflicts, etc!).

I had connected my modem up to COM 4 and this was the problem. The computer said COM 4 was OK with no conflicts, and COM 4 would dial via the modem and connect but, after a short time, grind to a halt. The solution, return to using COM 2 and leave the COM 3, COM 4 problem for another time. But all this wasted many days of frustration.

So, how come my two friends were having similar problems with their Internet connection with the same service provider? Just sheer coincidence! Their problems were not related at all. What dumb luck. Talk about a red herring!

Computer 2 Card 2

Now, so far what I have described hopefully has been entertaining but nothing unusual. This is where the X Files could take up the story.

By co-incidence I was, while having the above problems, buying a new computer, a Pentium II 266. The graphics accelerator card in the Pentium 100 is version 1. I decided to have installed in the new computer the next, just released, version 2 graphics accelerator card. Same manufacturer, but a later model with completely different chips. I have read this card is able to do 50 billion operations per second. I find this hard to believe but I gather the speed of the card is fast!

The new accelerator card worked for about four days and then it worked no more! I was stunned, to say the least! It

must be a software or configuration problem, I thought. Surely it could not be another faulty card.

After much playing around, as before, I discovered the 'Display' icon in 'Control Panel' would not load. Up came a message "*Mutual exclusion prohibits this*". After much more playing around, sometimes I could make the card work, but only for short times. Many hours later I gave up and returned the computer under warranty.

Oh Dear, You Have the 'A' Version, Sir!

The computer company confirmed that the accelerator card did not work and, after much playing around, came up with the idea that it could be Windows 95 A version. To save costs I had required my A version of Windows 95 to be installed onto the new computer.

So, what was wrong with the A version? The answer from my computer man was that it sometimes made mistakes when installing PCI cards. The graphics accelerator card is a PCI device and it did appear, when looking under 'System', that two PCI cards were loaded, one my card and another one that the computer knew was a PCI device but not what type of PCI device. This it listed under 'question mark'. This causes a conflict for the computer and the end result is it does not work.

What was the solution then? Removing the unknown PCI device only worked until the computer was re-booted and it proceeded to find the new PCI device and re-load the device under 'Unknown'.

The solution was to remove Windows 95 A version and install Windows 95 B version. This was at a cost to me but I appeared to have no choice. I gave the go ahead and returned the next day to watch the last of the drivers being loaded. Now came the big test. The 'Display' icon was clicked on and up came "*Mutual exclusion prohibits this*"! The computer man uttered a few expletives and then fell silent. After a few moments he added, "*I have no idea what the problem is, perhaps the graphics accelerator card is faulty*".

The next step was to swap the card in my computer. I left the shop to await the outcome. A phone call the next day confirmed the card in my computer was

faulty. At long last, a conclusion to the frustration and time wasting of the past few weeks. But how could I be so unlucky to have purchased two different model graphics accelerator cards installed in two different computers at different times and have both fail after about the same time? This remains a mystery but, so far, both cards are still working.

The Manufacturer

An interesting addition to the story is the e-mail correspondence I had with the graphics accelerator card manufacturer.

Many companies run Web pages with the latest software drivers for their products, along with questions and answers to many problems. You can e-mail the company and, after receiving a couple of standard automatic replies, you receive a reply from a real person about your problem.

I received two responses. The first mentioned that these cards can overheat and recommended I take the side off the computer and blow a fan through the computer. I did not see this as a good solution and did not believe the card was overheating, it being mid winter for starters. I replied with these comments and received the following. "*Yes, these cards can overheat in as little as 0.5 of a second!*" Yes, that is right, half a second! Even before the computer has done its POST (power on system test) the card is too hot to work. What rubbish. I'm drafting a reply to the manufacturer.

Conclusion

I hope you have found the articles interesting on what having a computer problem can mean to many computer users. I have about a dozen more, all from personal experience, and may share one or two from time to time. Many computer problems are so simple to fix when you know what the problem is. For example, a friend found his sound stopped working on his computer one day. After a couple of days of frustration I was able to suggest that perhaps the sound had been muted in the sound set-up window. A check that night showed that it had. At the click of a mouse the sound was returned. The chief suspect is his seven year old son.

One other experience I must share with you. This involves a mouse check-

(continued on page 45)

■ Operating 1998 Remembrance Day Contest Opening Address

The 1998 Address was delivered by His Excellency Major General Michael Jeffery, AC MC.

His Excellency was born in Wiluna, Western Australia and educated at Kent Street High School.

He attended the Royal Military College, Duntroon, graduating in 1959 as an infantry officer. He served twice in Papua New Guinea and saw operational service in Malaya, Borneo and Vietnam where he was awarded the Military Cross and the South Vietnamese Cross of Gallantry.

He has commanded all combat units of the Australian Army from a 30 man platoon to a 12,000 man infantry division and held senior two star appointments in logistics, materiel acquisition and operations.

For these services he was appointed as a Member and then an Officer of the Order of Australia.

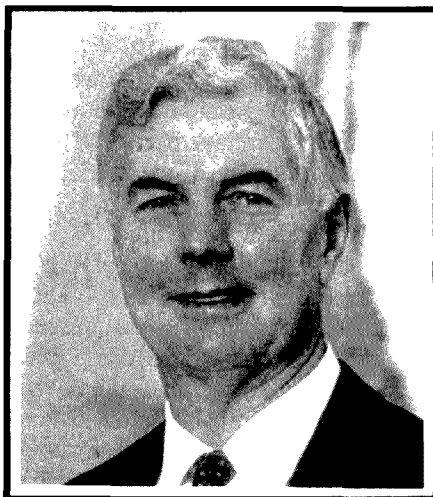
Major General Jeffery was appointed Governor of Western Australia on 1 November 1993 and became a Companion of the Order of Australia in June 1996 for his services to the State.

His wife Marlena is from Sydney and they have four children; three of whom are serving Army officers, the fourth a civil engineer and a grandson from their married daughter.

The Opening Address

As Governor of Western Australia, a former career soldier and war veteran, I am honoured to have been asked by the Wireless Institute of Australia to launch this year's Remembrance Day Contest, which perpetuates the names of those 26 radio amateurs who lost their lives in the service of our country.

This is an historic year for this contest being its 50th year of activity.



This year also marks the 80th anniversary of the end of World War I and the 70th anniversary of the founding of the Royal Flying Doctor Service.

Indeed it was during World War II, the Flying Doctor Service, as it was then known, played an important role in the defence of Australia through its pedal wireless network.

Earlier in 1918, the founder of the RFDS, the Reverend John Flynn had warned that an attack against Australia was likely to come by air from the north. Flynn was proved right when 128 Japanese bombers droned in from the sea in early 1942 and pounded Darwin, killing 233 people and wounding 250 others. Sixty four air raids followed, some on targets other than Darwin. For example, Broome, Derby and Wyndham were attacked, which suggested that invasion might be imminent.

Flynn immediately pledged the Australian Inland Mission (AIM) to an all-out war effort: Nurses, patrol padres and wireless staff served with distinction in the battle zones. AIM buildings became troop hospitals or were used as homes

for Army nurses. Six patrol padres served as chaplains to the forces.

Lacking an adequate wireless for themselves, the defence forces used Flynn's extensive outback network based on Alf Traeger's magnificent pedal powered radio. General MacArthur himself wrote that Traeger's transceiver was "one of the most useful pieces of equipment for communication purposes over the spaces of continental Australia."

The people of the inland were the eyes and ears of the defence forces, reporting anything suspicious. They were given silhouettes of enemy aircraft to enable them to report accurately. Transceivers were also used by the army and police and a special clandestine operation using Traeger's transceivers was set up in Arnhem Land to monitor and report on any Japanese troop movements.

Australia thus owes a great debt to these amateur radio operators.

From my own experience in Papua New Guinea and on active service in Malaysia, Borneo and Vietnam, I know full well that good communications save lives and win battles. During my service lifetime I have seen radio communications develop from long messages painstakingly sent by Morse code at eight words a minute and taking hours to get through, to today's unbelievable almost instantaneous data or burst transmission transfers utilising small hand-held battery powered radios with ranges of thousands of kilometres in all weather conditions with automated coding and decoding integrated into the system.

Much of today's technological progress has been made through the enthusiastic assistance of amateur radio operators.

It is fitting that we remember with gratitude, the sacrifice of those radio operators who gave their lives or were wounded as a result of their war service. We remember also the tragic loss experienced by the widows, children and families of those who gave their lives on active service.

In concluding, I would like to thank you for inviting me to talk with you on this important commemorative occasion and I strongly encourage those listening to take part in the 1998 Wireless Institute's Remembrance Day Contest.

ar

■ Operating

A Review of VK5MIR Operations

Ian J Hunt VK5QX
8 Dexter Drive
Salisbury SA 5109

In a previous item I indicated that I would provide some kind of summary regarding the operations of Andy Thomas VK5MIR during his mission on the MIR Space Station.

Whilst there is a large amount of ground to cover, I will do my best to provide a general review of operations as seen from here in Adelaide.

VK5MIR Licence

Late in 1997 I approached the Australian Communications Authority with a request for allocation of a reciprocal licence for operations by Andy from MIR. This was done on the basis of a suggestion made by Peter VK2EMU.

The ACA agreed that this could be done and I obtained the relevant documents from Andy, who already held the USA callsign KD5CHF, and made out the necessary applications. The ACA agreed to assign VK5MIR as a "Special Event" callsign and provided the licence accordingly. Andy's licence was presented to him in Adelaide during his visit here in December and January. The licence had been granted on the basis of the equivalent to the USA Technician Class licence which Andy held.

There was then some wait whilst Andy continued with the preparations for his mission and even after his launch from Cape Canaveral and resultant transfer from the shuttle to the orbiting MIR. Some time went by whilst the crews of the spacecraft shifted stores and supplies to the space station and generally settled down into a routine which would allow Andy the opportunity to begin some amateur radio operations. In the meantime, a close watch was kept on the frequency on which signals were expected to appear.

On Air

Once Andy got going on the radio it took him little time to grasp the techniques of amateur radio operation, bearing in mind that he had only recently obtained his USA licence.

Many contacts were made with Australian stations with signals varying in levels according to the Space Station configuration and attitudes with respect to the ground stations. Signal levels were generally strong enough that a simple two metre home station using small vertical antennas sufficed for a good contact. A number of contacts were also made using "hand-held" transceivers.

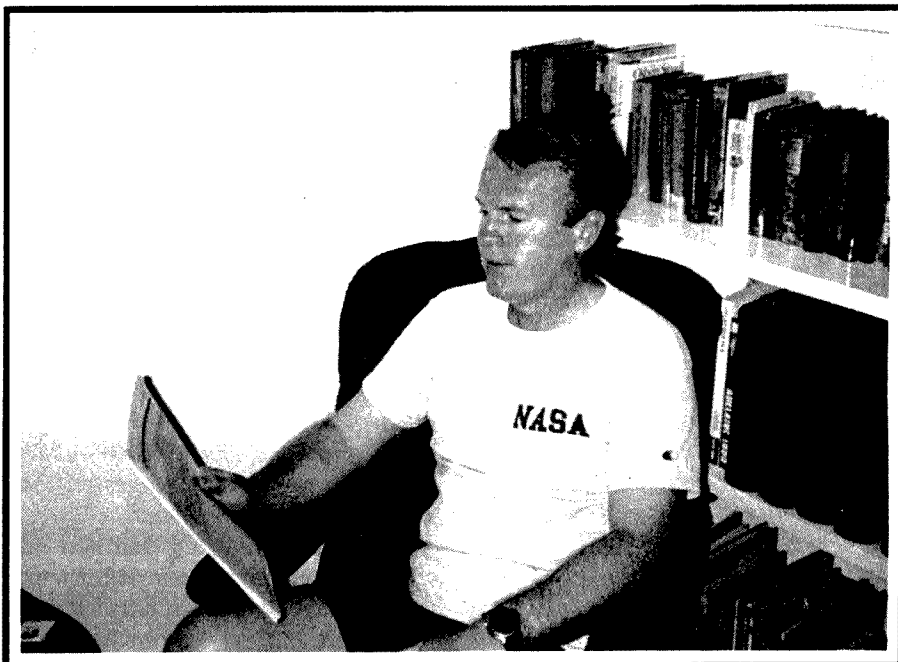
Operating Difficulties

Some problems were encountered with stations calling "blind", not having heard

signals from VK5MIR. Reasons why this occurred were generally because the operator of the relevant ground station did not have a satisfactory system and was obviously not able to hear Andy's calls. One station even abused an operator on the frequency when he was unable to appreciate that the voice he was hearing was that of Talgat RO3FT, the MIR Station Commander, speaking Russian and trying to talk with Maggie VK3CFI who not only speaks Russian but is well known to the cosmonauts.

Other difficulties occurred with QRM on the two metre frequency where stations called on voice when packet radio operations were in progress and no operator was present. Similar problems resulted due to repeated attempts to make packet radio connections when the station (ROMIR) was already connected with a ground station. Only one connection could be made at a time.

In some instances such occurrences were due to technical problems, particularly when "pager" systems produced de-sensitisation of the ground station receiver. Other instances were definitely due to poor operational techniques. Another problem occurred with stations not having their packet radio system set up to allow them to observe the connections made by other stations or ignoring them.



Andy Thomas VK5MIR looking at his VK5MIR licence.

Andy Communicates with His Family via Amateur Radio

Here in South Australia we were able to provide information to Andy of a semi-personal nature due to contact with members of his family living in the Adelaide metropolitan area. This information has been described by Andy as having been of great benefit to him whilst on his mission.

One South Australian station was able to connect Andy via phone patch allowing him to speak to family members. In another instance a mobile operator visited the home of Andy's father, Adrian Thomas, and provided the opportunity for father and son to talk to each other directly. Adrian was also able to listen to many of Andy's contacts as the space station orbit traversed Australia using a receiver and antennas loaned to him for the purpose.

As could probably be expected, some operators have criticised such operations; however, Andy has expressed great appreciation for the efforts of most Australian operators. It was also the case that he very definitely "called the tune" where contacts were concerned despite the terrific QRM problems he encountered. Naturally this situation was nowhere near as bad as Andy encountered over the USA and Europe.

Media Publicity

Despite the few minor drawbacks, generally speaking the whole operation was a success. Many contacts were made by Andy which resulted in wide media publicity for the local amateur radio operator and their hobby.

This media attention ranged from nation-wide television programs to a lengthy segment on a local FM station at the seaside town of Victor Harbor in South Australia with a YL operator involved. Once such occurrences took place there were calls from many other areas such as ABC Radio seeking information and providing "on air" coverage where Amateur Radio benefited from the attendant publicity. One ABC Radio presenter actually involved me in a 15 minute period dealing with amateur radio as a hobby with little reference to the Andy Thomas connection. A good deal of newspaper coverage has also

occurred from metropolitan daily newspapers as well as local community publications.

Participation in Australian Events

Events took place in many parts of the country with Andy speaking with various groups of people including youth clubs and Scout and Guide groups. One rather special contact along these lines was when Andy addressed a group of young offenders undergoing a rehabilitation exercise run by the South Australia Police and state Correctional Services personnel over parts of the Flinders Ranges in the north of the state. This particular effort was seen as being one of great motivational significance on the part of Andy Thomas and has been recognised by the relevant State authorities as being a major contribution to a community effort.

Other events in which Andy was involved included addressing groups of people gathered at various venues for events such as a large audience at an Adelaide Symphony Orchestra "Family Series" concert in the Adelaide Festival Theatre, the opening of the Australian Dirt Kart Championships at Kadina on the Yorke Peninsula and the opening address at the Heritage-listed Moonta Mines Methodist Church where a concert was performed by the Metropolitan Male Choir of South Australia.

In each case the connection with the hobby of amateur radio was able to be made and thus our hobby benefited from the resultant immediate publicity as well as the ongoing questions asked following such events.

There have undoubtedly been many more incidents worthy of report and aspects of which I am not aware. Stories will be told far into the future about that special contact or unusual item pertaining to Andy's operations.

Andy's Father Compiling Scrapbook of Media Coverage

Adrian Thomas has been compiling a "dossier" based on newspaper cuttings and other material available from the media, and also including audio and video material gathered in connection with these activities. He is interested in obtaining any items that are available.

Radio Theory Handbook

3rd edition

for amateur operators

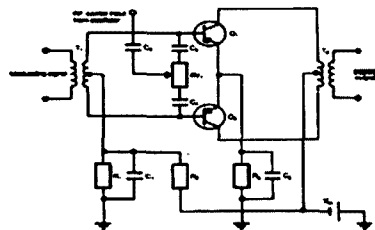
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This Australian book has been written in a concise and easy to understand manner to assist those who have no knowledge of radio theory or electronics and to be a useful reference for those working in the radio and electronics industry.

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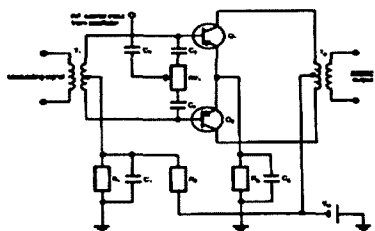
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Should you have such material you may contact me to obtain details as to how you can contribute.

Ambassador for Amateur Radio

In looking at this operation overall, there is no doubt whatsoever that it was a huge success from all points of view. Andy has been seen as a great ambassador for both Australia and the hobby of amateur radio. Now he is back at his home in Texas and recuperating well following his return from space.

It is expected that he will return to Australia later this year and it is hoped that in some way we will be able to have him either meet or make contact with as many other amateur radio operators as possible whilst he is here. Such will be done according to Andy's personal wishes, bearing in mind that there will be a big demand for his presence. It will, however, be necessary to see that his privacy is protected as much as possible whilst he is here.

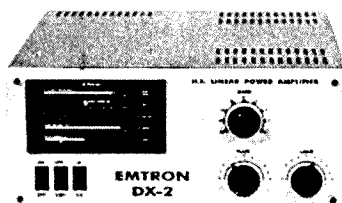
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New WIA Members

The WIA bids a warm welcome to the following new members who were recently entered into the WIA Membership Register:

L21073	MR R J CARSON
L21074	MR J E BURNS
L21075	MISS A ROBERTS
L70153	MR A R SIMMONDS
VK1PRG	MR R G REWHOLTZ
VK2ARY	MR R N YOUNG
VK2EJ	MR C J MINAHAN
VK2KYO	MR K N VARLEY
VK2MPX	MR C J SEXTON
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VK5PWD	MR D J BROWN
VK5WCC	MR W C COATES
VK5ZLU	MRS E HARDING
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Australia, stand up and cheer! The all-new Emtron DX-2 HF linear amplifier is a local product to be proud of! We've checked it from AC input to coax outlet this month, and it's come up squeaky clean. And DX hound Jim Smith, VK9NS, has a full report on his H4ØAB activation. It's a corker story you really mustn't miss! So is that all? No way...!

If there was any way we could jam more radio activity into the September R&C, we'd like to know how! Check these:

- **FILTERS:** here's the whole low-down from a filter expert. What they do, why, and how they do it.
- **REVIEW:** ICOM IC-Q7E. A dual-band hand-held transceiver with attitude! And is it really that cheap?
- **INDOOR HF ANTENNAS:** Don't laugh, this is serious. No tower need not mean no HF. These designs WORK!!
- **TREE ANTENNAS:** Ah no, we're not talking about putting wire in a tree here. More like using the tree itself...
- **JUDICIOUS REX IS BACK!** Our legal guru stalks the corridors of power once again. A new monthly column.
- *As usual, we have our three DX columns, mods and more... the best stories and regulars every month!*

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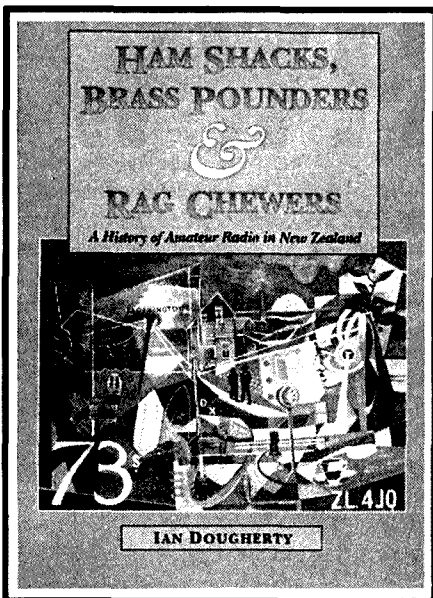
(PS. We also have the biggest collection of radio-oriented Classified adverts in the country. There's lots of them because they work so well. Ask your newsagent to keep a copy for you each month, or ring 1800 25 2515 for subscription details. Hurry — you might miss something!)

v3ce

■ Book Review

Ham Shacks, Brass Pounders & Rag Chewers

Publisher: NZART (in association with Historical Branch, Department of Internal Affairs, NZ)
Author: Ian Dougherty
Reviewed by: Bill Rice VK3ABP
ISBN: 0-473-04729-2



of information (as is also our own *WIA Book, Vol 1*, which is urgently in need of expanding!).

The widespread coverage of source data is perhaps better indicated by the fact that there are 47 pages of notes, references, manuscripts and publications. Truly a historical "tour de force"!

At \$AUS25.00, for my copy from NZART direct, it will not appear in everyone's bookshelf, but is probably the best radio amateur history yet written.

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only \$10.00 - order form in each Call Book.**

This book is subtitled "A History of Amateur Radio in New Zealand". Its author, although not an amateur himself, is a contract historian with the NZ Department of Internal Affairs and is currently writing a history of polytechnics in New Zealand.

Encyclopaedic in its coverage of the subject, the book is probably unique in the world for the wealth of detail it provides, from the beginning of amateur radio in New Zealand (in 1902), to the formation of the New Zealand Association of Radio Transmitters (in 1926), and up to the present day with about 6000 licensees. The nearest publications to compete with it in detail would probably be *Two Hundred Meters and Down* published by the ARRL in 1936, and *World at Their Fingertips* by the RSGB in 1967. Both are referred to as sources

QSLs from the WIA Collection

Ken Matchett VK3TL

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2-way *353* rst *5.3*

73 s *Omar*

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SYRIA - A Troubled Country

Due to its strategic position, Syria has been subjected to innumerable invasions, including those of the early Phoenicians, Hebrews, Romans and, of great significance, the Muslims. The country became part of the Crusaders' battleground. Instead of gaining independence at the end of World War 1 the country, together with Lebanon, was assigned to the French. Not until April 1946 did the country gain its independence.

6C 35 O

This QSL (6C thirty five O) celebrated 35 years of amateur radio in Syria. The WIA National Collection also contains the QSL 6C40 O dated 1987, celebrating 40 years of amateur activity. These QSLs indicate that such activity commenced in 1947. The date is most interesting. The earliest reference to amateur radio activity from Syria is possibly a small article in the January issue of *QST* 1930 when it was reported that station *ar8ufm* from Syria was heard on the 20 metre band. One can only infer that all transmissions prior to 1947 did not have official sanction. This will not surprise many of our readers who operated pre-war. There were several countries whose operators requested that QSL cards be sent to them in envelopes which did not disclose their call-sign.

Our modern system of prefixes dates from 1 January 1929 and was the result of the International Radio Conference held in Washington. The new allocation of prefixes was promulgated in the *Radio Amateurs' Handbook* of 1929, pp 189-190. Syria was not represented. Mention has been made of the early report of Syrian station *ar8ufm* (call-signs were frequently written in lower case). This call-sign was an "intermediate" precursor of our modern prefixes. Such intermediates were listed in the *Radio Amateurs Handbook* of 1927 (2nd Edition) pp 144-5. Syria was listed as AR and continued to be listed as such until the late 1940s. In a footnote to the 1932 edition of the *Handbook* pp 71-72 it was reported that the prefixes AR, AC (China) and AU (Siberia) are "carryovers from the old IARU Intermediates system; amateurs in those countries would be better advised to use the prefixes indicated by the Berne Table of Distribution". A difficult task indeed since no official prefix was ever allocated to Syria!

Pre-war DXCC listings of countries either list Syria as AR or leave a blank space after the name. The ARRL countries list in *QST* March 1949 p 40 shows the prefix YK next to Syria, although apparently this prefix was used for some time before that date.

AR1WW

This QSL dated July 1948 is an example of a QSL showing the old "intermediate" prefix AR. It is quite possible that the first "official" amateur radio transmission from Syria used such a prefix. The National Collection contains QSLs from ARIRI, ARIOD and AR1WW, all dated 1948.

DAMASCUS

SYRIA

AR1WW

W. B. Preecht
W2VLG

Y
K
I
A
A

Syria سوريا

وای کی ای ای

DXCC

RASHEED JALAL رشید جلال
P.O.B. 35 DAMASCUS ص.ب. 35 دمشق

YK1AA

This Syrian call-sign is known to every old-timer interested in DXing. The native Syrian was Rasheed Jalah, a very active and, for a considerable time, the only Syrian amateur operator. He was an excellent QSLer, his attractive black QSL card with its red English and Arabic writing adorning many a radio shack throughout the world. The February 1964 issue of *QST* reported that Rasheed "YK1AA works for the Damascus TV outlet, records sound for cinema companies and takes care of ground communications for the Syrian army".

In the 1970s several amateur stations were operating from the Golan Heights. Some were members of the United Nations Emergency Force (eg Canadian Contingent, UN Disengagement Observer Force). They operated with Canadian call signs /4U. Later, an Austrian group of amateurs used their own call-sign NK during the 1980s. At the time there were questions asked about the authenticity of such call-signs as the Golan Heights had been annexed by Israel as spoils of the Six Day War.

(continued on page 50)

Pounding Brass

Stephen P Smith VK2SPS
PO Box 381 Mona Vale NSW 2103

This month's column is an article from George VK3TES, RAOTC #1066, on "What is the bandwidth of a Morse (CW) signal?"

I hope you enjoy the article as much as I did.

Introduction

The bandwidth of an AM signal is usually well known, being defined by the highest audio frequency components. The bandwidth of a CW signal is less well known; indeed some may be tempted to think that the bandwidth is zero. This may be encouraged by the choice of the term CW which is a slight misnomer.

A signal, to be a "Continuous Wave", must exist forever to be free of sidebands. Turning a "CW" signal on and off is modulating it and said modulation produces sidebands in the well established manner.

It would appear that the origin of the misleading term CW was when the original spark transmitters used for Morse transmission were replaced by generators of the Continuous Waves. The early generators were rotary alternators and valve oscillators, while the early spark transmitters were of pulsed-damped-oscillations.

The Morse Signal

The basic timing element of a Morse signal is the "dot". The letter E, which is one dot, has a length of two dots, one for the dot and one for the following space. The letter T has a length of four dots, three for the dash and one for the following space.

With this formula it is possible to ascribe a dot length for each letter of the alphabet. Adding all these together and dividing by twenty six gives an average character length of nine "dots". Allowing a weighting for the most used characters gives them a length of, say, eight dots.

Presuming an average word length of five characters, with three dots between characters and seven dots between words, gives

approximately sixty dots per word. At one word per minute this would be one dot per second.

This establishes Rule 1.

Rule 1

The dots per second equals the words per minute.

The Frequency Component

The dot plus space generates a square wave of time duration equal to twice the dot time, or half the frequency. This is the highest fundamental frequency generated by Morse, as the dash and the three and seven dot spaces have lower fundamental frequencies. This frequency is defined as half the dots per second.

This establishes Rule 2.

Rule 2

The highest fundamental frequency in Hz is defined as half the dots per second, or half the words per minute (frequency in Hz equals words per minute divided by two).

The basic dot cycle (square wave) has a large harmonic component, key clicks. These are removed by the usual key click filter which is normally a resistor capacitor combination which must have a time constant such that the capacitor has sensibly charged before the end of the dot period. To achieve this, the time constant of the circuit should be about one fifth of the time of the dot period.

An Example

At ten words per minute the dot period is ten per second, the dot length is 0.1 second, the fundamental is 5 Hz, and the filter time constant is 0.02 second.

The 6 dB cut-off frequency of this filter is $1/(2 \cdot \pi \cdot TC)$ or approximately 8 Hz. The first harmonic generated by a square wave is the third, or 15 Hz, and is one third the amplitude of the fundamental, or 9.5 dB down. Add the attenuation of the filter and there should be 10 Hz.

While a square wave of 5 Hz would have frequencies of 5 Hz, 15 Hz, and 25 Hz, etc, the dash and space periods produce lower fundamental frequencies as well as even and odd harmonics, hence the use of 10 Hz. This sets Rule 3.

Rule 3

The highest frequency component in Hz will be the words per minute. For example, the highest frequency component of 10 words per minute will be 10 Hz.

Comment

This explains why low speed CW signals can be received through very narrow crystal filters. The beat frequency tone is generated after the filter and only requires the presence of the carrier to beat with the BFO.

If one could have a crystal filter of zero bandwidth it would have infinite Q and once it started oscillating it would never stop, thus removing all modulation.

There may be other values quoted for the highest frequency component; these will depend on the assessment of the filtering of the keyed signal. Increasing the time constant will reduce the bandwidth.

It should be noted that the key filter will be optimised for a particular speed and equipment. This will result in somewhat modified results at other speeds.

The values quoted here have been rationalised to produce simple figure relationships.

The Rules

Rule 1. The dots per second equals the words per minute.

Rule 2. The highest fundamental frequency generated is defined as half the dots per second or half the words per minute (eg frequency in Hz equals words per minute divided by two).

Rule 3. The highest frequency component in Hz will be the words per minute (eg the highest frequency component of 10 words per minute will be 10 Hz).

Once again, thanks to George VK3TES for the above article. Next month, Morse on the move - using CW in the car. ar



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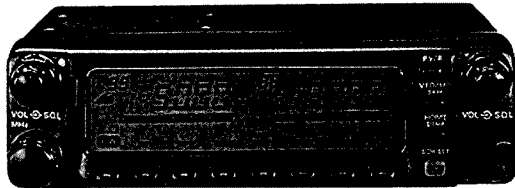
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 Gain: 7.9dB on 2m, 11.7dB (70cm)
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 Connector: SO-239 socket
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Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaco Street, Mentone VIC 3194
E-mail: vk3did@hotmail.com

A request! If anyone has something to send to me via e-mail, will you PLEASE make it in ASCII format and NOT as an attachment? Many thanks.

Thanks this month to VK3DMS, VK3APN, VK6NE, VK6VZ, SM3CER, ZL3KR, NZART, ARRL, and RSGB.

Special Notice

The RSGB has advised that there has been a catastrophe in their mail service. Contestants who submitted logs for the 7 MHz Contest in February are asked to resubmit those logs as soon as possible.

Results PACC 1998

VK only (Call\Class\QSO\Mult\Score)				
VK2APK	SO	80	30	2400
VK4EMM	SO	77	29	2233
VK8AV	SO	79	26	2054
VK4TT	SO	22	8	176

Results Asia-Pacific Sprint February 1998

(Call\QSO\Mult\Score)			
VK4EMM*	72	47	3384
VK5GN	48	34	1632

Results Sangster Shield 1998

(Call\QSOs\Score)		
VK5NJ*	16	1600
VK3DID*	11	440

Results Commonwealth Contest 1998

24 Hours Section (Call\Score)

VK2BJ	6690
VK4EMM	6530
VK6VZ	4160
VK1FF	4050

Results ARRL DX CW Contest 1997

VK only (Class\Hrs\QSOs\DX\Score)				
VK5AI SOLP	17	513	121	185,856
VK1FF SB40	12	579	55	95,535

Contest Calendar September - November 1998

Sep	5/6	All Asia DX Contest (Phone)	(May 98)
Sep	6	Bulgarian DX Contest (CW)	(Aug 98)
Sep	6	Panama SSB Contest	(Aug 98)
Sep	12/13	Worked All Europe (Phone)	(Jul 98)
Sep	19/20	SAC DX (CW)	(Aug 98)
Sep	26/27	SAC DX (Phone)	(Aug 98)
Sep	26/27	CQ WW RTTY DX Contest	(Aug 98)
Oct	3/4	VK/ZL/Oceania DX Contest (Phone)	(Aug 98)
Oct	4	RSGB 21/28 MHz Contest (Phone)	(Sep 98)
Oct	10/11	VK/ZL/Oceania DX Contest (CW)	(Aug 98)
Oct	17	Asia-Pacific Sprint (CW)	(Jan 98)
Oct	17/18	JARTS WW RTTY Contest	(Sep 98)
Oct	17/18	Worked All Germany (Mixed)	(Sep 98)
Oct	18	RSGB 21/28 MHz Contest (CW)	(Sep 98)
Oct	24/25	CQ WW DX Contest (Phone)	(Sep 98)
Nov	1	High Speed Contest (CW)	(Oct 98)
Nov	1-7	HA QRP Contest	(Oct 98)
Nov	7/8	WAE RTTY DX Contest	(Jul 98)
Nov	7/8	OK DX CW Contest	(Oct 98)
Nov	14	ALARA Contest (CW/Phone)	(Sep 98)
Nov	14/15	IARU Region 1 160 m Contest	
Nov	14/15	All Austria CW Contest	
Nov	21/22	CW WW DX CW Contest	

Results CQ-M DX Contest 1997

Oceania (Class\Score)			
VK8AV	MBCW		47742
VK2APK	SB14CW		55384

RSGB 21/28 MHz Contest

Phone: 0700 - 1900z Sun, 4 October
CW: 0700 - 1900z Sun, 18 October

Object is to work as many UK stations as possible on 21 and 28 MHz (UK includes GI, but not EI).

Categories (single or multi-operator) are: open, restricted, QRP and SWL. In the restricted section, only one antenna is allowed, which must be a single element no more than 15 m high and 100 W max o/p. The open section has no antenna or power limitations.

Send RS(T) plus serial number starting at 001. UK stations will add their county code.

Score three points per QSO. Final score equals total points times multiplier (countries worked on each band added together). Use a separate log for each band.

Send logs and summary sheets, post-marked by 13 November, to: RSGB HF Contests Committee c/o G3UFY, 77 Bensham Manor Road, Thornton Heath, Surrey CR7 7AF, England. A comprehensive range of awards is offered.

SWLs may only log UK stations making contest QSOs with overseas stations. SWL logs should be headed time UTC; callsign heard; number sent by that station; callsign of station being worked; new multipliers; points. In the column headed "station being

worked", the same callsign may only appear once in every three QSOs except when the logged station counts as a new multiplier.

JARTS World Wide RTTY Contest

0000z Sat - 2359z Sun 17/18 October

This RTTY contest runs on the third full weekend in October each year.

Categories are: single operator multi-band; multi-operator and SWL. Bands are 80 - 15 m (no WARC). Exchange RST + age; YLs send RST + 00. Score two points per QSO with own continent and three points per QSO for other continents. The multiplier is the total number of DXCC countries and W/VE/JA/VK call areas worked on each band, with all bands added together. Send logs, to arrive by 31 December, to: JARTS Contest Manager, Hiroshi Aihara JHIBIH, 1-29 Honcho 4, Shiki, Saitama 353, Japan

Worked All Germany DX Contest (Mixed)

1500z Sat - 1500z Sun 17/18 October

In this contest, which runs on the third full weekend of October each year, the world works Germany.

Categories are: single operator all band (CW, mixed, mixed QRP max 5 W o/p); multi-operator single Tx; SWL. Bands are 80 - 10 m (no WARC). Exchange RST(T) plus serial number. German stations will add their DOK (location code). Each station may be worked once per band per mode.

Score three points per QSO and determine final score by multiplying the total number

Results VK/ZL/Oceania Contest 1997

Continental Leaders

	Single Operator		Multi-Operator	
	Phone	CW	Phone	CW
Oceania	VK3AJJ	VK4EMM	VK4EMM	ZL2WB
Asia	UA0ZBK	YB1AQS	.....	RA0JD
Europe	OH6IU	OH8RC	.....	.....
Nth Amer	8P6CV	N6RO	.....	.....
Sth Amer	.....	HPIAC	.....	.....
Africa	9X0A			
	SWL			
	Phone	CW		
Oceania	ZL149			
Asia	JA4.4665	UA0107181		
Europe	OM3277.07	ONL383		

Winner of Frank Hine Memorial Trophy for Highest CW Single Operator Score:

John VK4EMM 4306932 points.

Individual Results

Phone VK

Callsign	80	40	20	15	10	Total
VK1MJ	90	30690	40425	77616	22680	722400
VK1FF		5	12604	6716		40032
VK1PK		5	10			150
VK2EKY	10	1700	122905	42504		407363
VK2XT		320	5262	6808	113646	816
320247						
VK2ARJ			58401	52392	48	237915
VK2APK		167140				167140
VK2LEE	100			240	138	49234
VK3AJJ	1650	667120	137397	174640	300	981107
VK3CAM			144			144
VK4EJ			30277			30277
VK4JAE	90			750		1428
VK4MOJ				270		270
VK5KMI		10		12		164
VK8DK		33600	990	15840	14850	65280
Multi-Operator						
VK3ER	720	49200	40425	25434	16020	609124
VK4EMM	20880	189440	33823	149400	29547	1947640
VK5GN	30	1120	331	1120	297	1837332

CW VK

Single Operator

VK1FF	200	356265	61420	56144	216	1398306
VK2APK	63240	361430	65740	35600	882	1998125
VK2EKY		88635	10920	13068	1479	371316
VK3MR	2600	35625	440	4662		43317
VK3XB		8225	1184	1050		28336
VK3KS			247	198		902
VK4EMM	6210	1418715	19780	144628	26640	4306932
VK4TT			104196	25404	126	247170
VK4ICU	250	6970	3050	14784	429	96114
VK4XA					77976	77976
VK5GN	3450	15980		33372	1740	181485
VK8HA	40	5920	2332	760	1380	42939

Check Logs: VK3APN; VK5OE

of German districts (first letter of DOK) worked on each band regardless of mode. Send logs, summary and dupe sheets to arrive by 19 November to: Klaus Voigt DL1DTL, PO Box 720427, D-01023 Dresden, Germany. Logs on DOS disk are welcome, if accompanied by a signed summary sheet.

CQ WW DX Contest

Phone: 0000z Sat - 2400z

Sun 24/25 October

CW: 0000z Sat - 2400z

Sun 21/22 November

Sponsored by CQ Magazine, these contests present the opportunity to work many

rare countries and zones, even with modest equipment. They are open to all stations world-wide, on bands 160 - 10 m (no WARC).

Categories are: single operator; single operator low power (max 100 W o/p); single operator QRPP (max 5 W o/p); single operator assisted (for those using DX spotting nets); multi-operator single transmitter and multi-operator multi-transmitter.

Single operator stations can enter as single or all band and can change bands at will.

Multi-operator stations must enter as all band. Multi-operator single Tx stations must stay on a band for at least 10 minutes, EXCEPT that one - and only one - other band may be used during the 10 minute period if - and only if - the station worked is a new multiplier.

Multi-Tx stations are exempt from this rule, but can only radiate one signal per band at any one time.

Exchange RS(T) plus CQ zone. Score three points for QSOs with stations in a different continent, and one point for stations in the same continent (for VKs this means Oceania as defined for WAC).

Stations in the same country or call area can be worked for additional multiplier credit, but have zero points value.

The total multiplier is the number of DXCC countries plus zones worked. Final score equals total points times total multiplier.

Use a separate log for each band. Show new multipliers in the log the first time they are worked and duplicates with zero points. Entrants are encouraged to include a "dupe sheet" for each band, which becomes mandatory for 200 QSOs or more.

Computer logs are welcome and must be in ASCII on DOS disk, using separate files for each band, eg VK7AAA.20 for a 20 m log; alternatively in K1EA "CT".BIN format, eg VK7AAA.BIN.

Label the outside of the disk with the call sign, files included, mode and category.

Disks MUST be accompanied by a paper printout satisfying logging instructions.

The committee may request a disk from high-scoring stations to enable the log to be checked by computer, if the log originally submitted was a computer printout.

Include a signed summary sheet, showing power output for the low power and QRPP entries.

Send logs, postmarked by 1 December (Phone) or 15 January (CW) to: CQ Magazine, 76 North Broadway, Hicksville, NY 11801, USA.

Indicate Phone or CW on the envelope. Numerous awards, trophies and plaques will be awarded to the leading entrants in the various categories and countries.

ALARA Contest (CW/Phone)

0001z - 2359z Saturday, 14 November

This contest runs on the second Saturday of November and is open to all licensed operators and SWLs.

Object: YLs may work anyone; OMs and Clubs may work YLs only.

Bands: 80 - 10 m (no WARC) and suggested frequencies: 3560 - 3590; 7070 - 7100; 14250 - 14280; 21170 - 21200 and 21380 - 21410; 28380 - 28410 kHz.

Call on Phone "CQ ALARA CONTEST"; on CW YLs call "CQ TEST ALARA" and OMs call "CQ YL".

Exchange RS(T), serial number starting at 001, name and whether Club station. ALARA members will add their member number after the serial. Club stations must indicate after name.

Repeat contacts: Stations may be contacted on same band and in same mode after one hour. No net, list, cross mode or cross band operations.

Score on Phone: five points for QSO with ALARA member; four points for QSO with YL non-member; three points for OM and Club stations.

CW: contacts where at least one operator is a Novice score double points; otherwise same as Phone. SWLs score five points for ALARA members and four points for YL non-member logged.

Logs: Single log entry acceptable, but VK YLs entering for Florence McKenzie CW Trophy should use separate log. Show date, time UTC, band, mode, callsign worked, reports sent and received, name of operator worked, whether Club station and points claimed.

Send signed logs showing callsign, name and address of entrant and final score to: Mrs Marilyn Syme VK3DMS, 68 Bowrings Lane, Mildura, 3500, Australia, by 31 December, 1998.

The Florence McKenzie Trophy will be awarded to the VK YL operator with highest CW score over 50 points. Certificates will be awarded to top scorers in various areas, as well as trophies to the top scoring VK YL and DX YL.

ar

ALARA

Christine Taylor VK5CTY

ALARA Publicity Officer

16 Fairmont Avenue, Black Forest SA 5035

Packet: VK5CTY@VK5TTY

Birthday Celebrations

ALARA began with a meeting on air on 21 July 1975. So, in July each year we celebrate the occasion with an Activity Day on air and by Birthday Luncheons.

Unfortunately, there was a certain amount of confusion this year. The date for the Activity Day as shown in our Newsletter was Sunday instead of Saturday (our very efficient Newsletter Editor, Dot VK2DDB, HAD one of those calendars that start the week on a Monday instead of a Sunday - the calendar has now been sent to the WPB).

Therefore, some of us were on air on Saturday and some on Sunday. However, altogether the following stations were heard. Mavis VK3KS, Bron VK3DYF, Gwen VK3DYL, Dot VK2DDB, Jenny VK5ANW and Christine VK5CTY. Let's make it more next year, shall we?

VK3 and VK5 held Birthday Luncheons. In Melbourne we had Mavis, Bron, Gwen and Jean Shaw with apologies from several others. In Adelaide we had 10 attendees, including Myma VK5YW and Jenny VK5ANW, two of the earliest members of ALARA. A new face to most of us was Judy VK5BYL, who is well known to many CW up-graders of a few years ago.

Judy made a practice of sending recipes in CW as practice for those listening to 3.550 MHz every night to improve their Morse speed.

Sometimes she used Metric measures and sometimes Imperial, and sometimes a combination of both (within the same recipe) which made it very difficult to journalise! She has been unable to come to many previous Birthday Luncheons due to business (she has now retired from that) or because of a clash with a series of family birthdays at the same time of the year. We hope Judy will be able to join us more frequently.

Our heartiest congratulations go to Janet VK5NEI on the CFASA medal she was awarded recently. Janet has been a member (now a Lieutenant) of the Woolshed/Wasleys State Emergency Service team for 20 years, mostly as their radio operator. Like so many of our unsung volunteer workers she has been called out of bed at all hours of the night to come to the aid of those in trouble.

Maria VK5BMT was another face we don't see very often at the Birthday Luncheons. This year Maria and Keith decided to stay in Adelaide for the winter instead of taking one of their tours to the warmer climes of the North. The other five, Jean VK5TSX, Tina VK5TMC, Deb VK5JT and Christine VK5CTY, with Jenny Housden just back from seven weeks overseas, have attended most of these luncheon in recent years.

To complete the day, four OMs were at a nearby table. Instead of the OMs going to a different venue and just joining us for coffee, they had their own table at the same venue. The regulars, Geoff VK5TY, Rod VK5SX, and Rob VK5ZHW were joined by Bailey VK5BAD, OM of Judy. A pleasant day was enjoyed by all.

Traveller's News

Your reporter received a post card from Sally VK4SHE from the UK. She was on a narrow boat (or barge), just drifting along the canals of Wales. The post card shows one of the narrow boats being pulled by a horse across a beautiful stone aqueduct.

Sally says they did cross the valley on (or should it be 'in') this aqueduct but they weren't being pulled by a horse. On the way to the UK, Sally and OM Rex enjoyed a week in Thailand and several days in Rome. They are seeing something of both the old and the new world.

This is also the time for southern VKs to go north. I hope you are keeping an ear on the Travellers' Nets so you know when someone is visiting your part of the world. There is nothing like a friendly voice coming back to your call through a repeater as you enter a new city or town.

ALARA Contest

Don't forget the new rules for the ALARA Contest as given in this column last month, and in the Contest column in this month's *Amateur Radio*.

Please do participate, and please do send in your logs, but please note the new address for the logs. There are house moves afoot in Mildura so Marilyn VK3DMS has given us her business address to save confusion.

YL Meet in Svalbard

Gwen VK3DYL is going to Svalbard to represent ALARA (and WARO) in August

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Agnes PA3ADR, OM Henk and Dot VK2DDB (see text).

this year, but she will not be the only ALARA member there. At the time of writing we know there will be six DX ALARA members. Unni LA6RHA who, with Ruth LA6ZH and Turid LA9THA, is organising the Meet, is sponsored into ALARA by Gwen. They will be meeting Christa DJ1TE, Sigrid DL3LG, Ruth IT9ESZ, Angelika G0CCI and Carol WD8DQG.

Many activities have been planned for the visitors, so there will be people scattered all over the island. But one activity will keep them in one spot, at least, the radio shack! Listen out for the rare (or relatively rare) DX with a number of different operators.

ALARAmeeet in Brisbane

Plans are well under way for us in Brisbane next year so start making your plans to be there. A number of ZLs have already indicated that they are making plans to attend.

We can't have them out-number us, can we?

Dawn Young ZL2AGX SK

It is with great sadness we report the passing of Dawn ZL2AGX on Monday, 3 August 1998. Dawn joined ALARA in January 1987, sponsored by Val VK4VR, and was an active participant in many ALARA activities.

Dawn and her OM Dennis ZL2BFI attended the Castlemaine ALARAmeeet in 1993 and showed us that her wonderful sense of humour was as good off the air as it was on the air.

She was an active committee member of WARO for many years, an avid ISSBer and DXer, and a regular on the YL 222 DX net. In late June Dawn had a sudden trip to hospital with pneumonia. Unfortunately, she was only home a short time before she landed

back in hospital after suffering a stroke. Dawn had many friends all over the world and will be missed by them all, especially the ALARA members.

ALARA Office Bearers for 1998/1999

President, Judy Atkins VK3AGC; First Vice-President, Bev Clayton VK4NBC; Second Vice-President, Robyn Gladwin VK3ENX; Secretary, Tina Clogg VK5TMC; Treasurer/Souvenir Custodian, Bev Clayton VK4NBC; Minute Secretary, Bron Brown VK3DYF; Publicity Officer, Christine Taylor VK5CTY; Contest Manager, Marilyn Syme VK3DMS; Historian, Deb Matthews VK5JT; Sponsorship Secretary, June Sim VK4SJ; Awards Custodian, Jean Shaw; Librarian, Kim Wilson VK3CYL; Editor, Dot Bishop VK2DDB; and ALARAmeeet Co-ordinator, Bev Clayton VK4NBC.

State Representatives

VK1/2, Dot Bishop VK2DDB; VK3, Bron Brown VK3DYF; VK4, Margaret Scherwin VK4AOE; VK5/8, Jean Kopp VK5TSX; VK6, Bev Hebiton VK6DE; and VK7, Helene Dowd VK7HD.

Agnes PA3ADR

As reported in an item a few months ago, Agnes PA3ADR and OM Henk visited Dot VK2DDB in January (see photo above) when they were in Australia to enjoy our summer during their winter. Their summer now is wet and cold, daytime 15 degrees, and they have the fire alight regularly. Agnes and Henk are planning to visit friends and family in Australia again in November and stay until after Christmas.



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How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Percy Anderson VK4CPA - SK

On almost every day of the week at 0445 UTC time, an elderly gentleman known among amateurs as "Percy" sat down in front of his transmitting station in southern Queensland. His transmitter was tuned to 21205 kHz. He checked the propagation patterns, acknowledged those who tuned into the "old" ANZA frequency, and listened to the solar and geophysical reports from WWV at Ft Collins, Colorado USA or from WWVH Hawaii.

At 0500 UTC he tuned to 14164 kHz and announced: "This is VK4CPA, net controller for the ANZA net. My name is Percy. Any check-ins for the ANZA net?"

The reply was almost instantaneous. Amateurs from Australia, New Zealand, USA, Central America, the Pacific, South East Asia, South Africa, European stations on the long path, and often a rare DX station, responded. They all wanted to check-in to the net, 'the friendly net' as it was often called. They exchanged signal reports, weather reports, QSL information and passed on personal greetings. All these activities took part under the guidance of the net controller, Percy Anderson.

It is my sad duty to advise readers, that Percy VK4CPA is now a 'Silent Key'. He died after a short illness on 30 July. He was 92 years old.

Percy was from Victoria where he became a licensed amateur in 1928 using a simple CW transmitter and the callsign OA3PA, later to be changed to VK3PA. Percy was 16 years old when he was attending West Melbourne Technical School in 1922 and became interested in "wireless". He built his first crystal set and was an avid broadcast listener. In 1927 he built his first short-wave receiver and one year later he was on the bands. In 1931 he was already active on "five metres". Percy was called up for active service in World War II in July 1940. After the war he worked with the Australian Broadcasting Commission as a Senior Technical Officer until his retirement. All the equipment used

by Percy at that time was home brew (he purchased his first commercial set in 1968).

Percy joined the "Pacific DX Net" in 1970 and in 1972 he became a net controller on 14265 kHz for 10 years.

The other net, running in parallel, the ANZA net (Australia New Zealand and Africa net), was Percy's idea, and was his "baby" for the rest of his life. The first operational day was on 20 May 1970 on 21300 kHz (later to be moved to 21205 kHz). The ANZA net was 28 years old this year and is probably one of the oldest continuous amateur radio nets in the world. Percy moved from Victoria to southern Queensland near the Gold Coast in May 1987 and changed his callsign to VK4CPA.

Due to propagation problems in the early 1990s, a secondary frequency was established for the net on 14164 kHz. In the past few years a number of volunteers from VK4, VK5, VK6 and ZL came forward to assist Percy who found the daily routine sometimes tiring.

Percy's departure to the DX world of the Australian blue skies has left a big gap, not only in the running of the net, but also in the DX world generally. He was well known all over the world and his passing has saddened many of his amateur friends. However, his memory and his efforts of helping his fellow DXers will remain with us for many years. The ANZA net will continue with a variety of net controllers and it might even change its name to the Percy Anderson ANZA Net.

Nepal - 9N1

Amateur radio is making a slow but steady progress in Nepal. It was not so long ago that there was only one approved radio amateur

in Nepal, Father Moran 9N1MM ("Mickey Mouse").

Father Moran passed away some years ago, and only after his death was it revealed that his "activity approval" was a verbal one given to him personally by the King of Nepal. Since Father Moran's passing the political scene in Nepal has changed somewhat and the amateur radio service is now an accepted activity in this landlocked Himalayan country of 18 million inhabitants located between India and China.

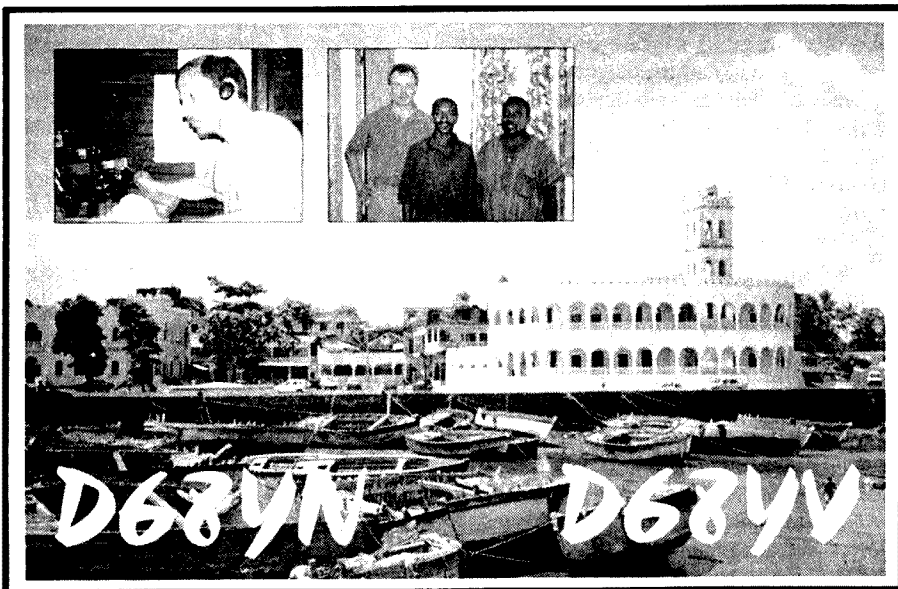
There are now at least two licensed local amateurs, Satish 9N1AA and Suresh 9N1HA. Quite a number of "foreign" visitors have been given "tourist" visiting licences over the years.

Not so long ago, Neil VK6NE, who made a short visit to Nepal in December 1997, received a fax from Satish 9N1AA. Here are a few interesting news items.

Recently an amateur examination was held in Nepal for issuing new licences. There were twenty applicants. Eight of them passed the written test and four have passed the Morse test. This will result in four new local operators. Examinations will now be held every six months.

The information material provided by the WIA and the VK9XZ Island Hoppers Group, was extremely helpful to the Nepalese authorities in designing the examination questions.

The annual licence fee for local amateurs is now 500 Nepalese Rupees (about \$AUS6.00). However, the Nepalese Government refused to reduce the licence fees for visiting foreign amateurs (Neil VK6NE and Joe VK6BFI paid \$195.00 each for a ten days permit on 15 and 20 metres SSB).



Martin HB9CYN and Chris HB9CYV operating from Comoros Island as D68YN and D68YV.

Satish thinks that the number of licensed amateurs will increase day by day. The majority of the local operators cannot afford individual modem equipment, and there are now plans to establish a club station to be named the Moran Memorial Station (9N1MM). Satish is currently trying to collect equipment for that purpose.

He says that if such equipment could be carried to Nepal by somebody (in person) it could enter the country easily. However, formal import of such equipment would be somewhat harder. The customs duty is settled this year at 30%.

VIP Radio Amateurs

During my many years of amateur radio activity, there were two special occasions when I could not get through the "pile-up".

One such occasion was when King Hussein of Jordan, JY1, was at the microphone. European and USA stations swamped me.

The other occasion was on 40 metres when Juan Carlos EA0JC, the King of Spain, was on air. An instant pile-up completely blocked my signals. On both occasions the activity did not last long, maybe twenty minutes or so.

There are other well known persons who have an amateur licence, some of them actually reported as being on the air in the past. Here is a list of these famous people. The list might not be complete and not all the call signs are listed in the Callbook.

* A41AA - HM Sultan Qaboos Bin Said Al Said, Sultan of Oman.

* CN8MH - HM Hassan, King of Morocco.

* F05GJ - Marlon Brando, actor.

* I0FCG - Francesco Cossiga, former President (1988) of the Italian Republic.

* HS1A - HM Bhumipol Adulayadej, King of Thailand.

* K1JT - Joseph Taylor, Nobel Prize winner (1993) in Physics.

* K20RS - Jean Shephard, actor.

* LU1SM - Carlos Saul Menem, President of the Argentine Republic.

* N2YOS - Priscilla Presley, actor.

* VU2SON - Sonia Gandhi, widow of the former Indian Prime Minister, who also had an amateur licence.

* W6QYH - Roger Mahony, Cardinal.

A number of astronauts also had amateur call signs, the latest being Dr Andrew (Andy) Thomas KD5CHF/VK5MIR. He is claimed by both nations, having dual citizenship.

The latest addition to this list will be Japan's former Foreign Minister and now newly elected Prime Minister, Keizo Obuchi J1K1T. Obuchi is a member of the JARL which describes him as "an enthusiast for amateur radio". Known as "Mr Ordinary Man", Obuchi, 61, will face the task of wresting Japan from the grip of its worst recession since World War II.

North Korea - P5

The number of separate DXCC entities (formerly known as DXCC countries) at present is 328. Only about 28 amateurs worldwide have reached this position on the top of the DXCC ladder. They are those amateurs who were lucky enough to have a contact with P5/OH2AM in 1995.

North Korea is still the "closed community and forbidden country" where the amateur radio service is still not given official status.

In my opinion it will take many more years before the present situation changes. North Korea is a country with a socialist political system, with "self reliance" as one of its principal objects. It is now undergoing a very difficult time. Floods, droughts, storms, failure of crops, and distribution problems have put the country into a politically sensitive situation.

The doors of North Korea will be locked until this situation changes for the better. No self respecting socialist country will put its difficulties on an international viewing platform, especially not when it is a closed society. One also must not forget the cultural aspect of "loss of face".

The 1997 edition of the *ARRL DXCC Year Book* has an interesting segment on North Korea. Here are some extracts.

"First voted into DXCC status in 1991, North Korea remained in limbo for several years, waiting only for an accredited Operation. OK1DTG/P5 was active during his stay there, but was unable to get the necessary written documentation for his operation. The P5RS7 operation did not take place from North Korea, but from Russia, leaving North Korea as a footnote in the Countries list.

"In May 1995, a short operation was made by OH2BH and OH0XX, operating as P5/OH2AM. Examination of the tapes of the operation show there was no special list and the necessary written documentation was provided.

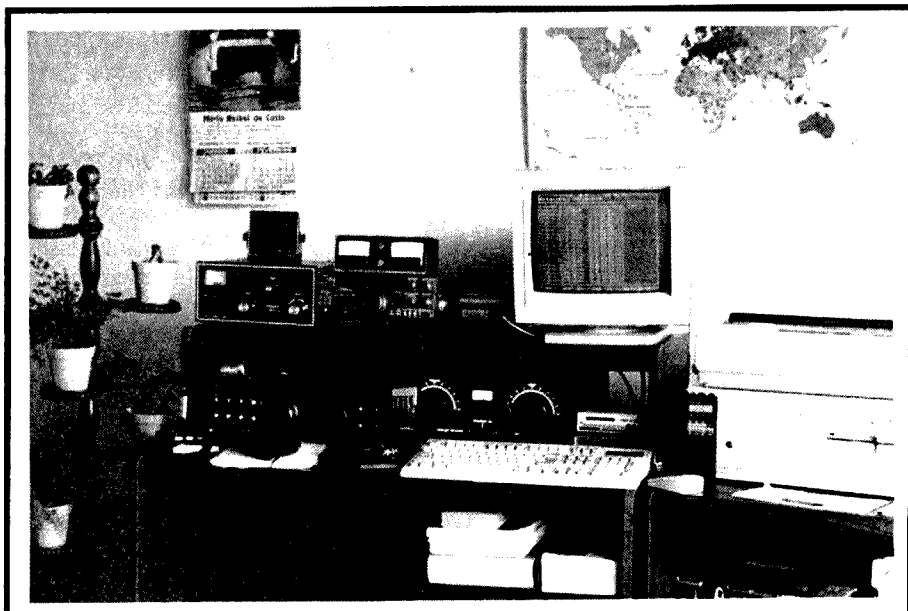
"A special DX Bulletin announced the possibility of this operation beforehand, but problems with Russian Customs at the border crossing delayed entry into North Korea, thus preventing more than a short operation. Propagation was not favourable and operating time was limited so very few contacts were made. No further operation has occurred since.

"BA1HAM and JA1BK made a trip to North Korea in April 1996 for the purpose of training operators. There is an active Radiosport Association under the administration of the State Commission for Physical Culture and Sports of the DPRK. The president of this group is also the Minister of Communications. However, outside influences came into play and the result was no on-air activity.

"HA7VK applied for a licence in May of 1996, but was turned down. In late July he visited with the Communication Ministry and was told that the DPRK had plans to put a club station on air, but that it would be done with DPRK nationals."

Future DX Activity

* Tanzania - 5H. Dave K8MN will arrive at the Tanzanian Capital Dar Es Salaam at the end of August for three years duty at the US Embassy. He hopes to be on air in September (?). QSL via WA8JOC, Ken Scheper, 5875 Cedar Ridge Dr, Cincinnati, OH-45247, USA.



The station of Manuel CU7BA on Faial Island, Azores.

* **Brazil - PY.** Klaus DJ8UG will be active from September as **PT8ZCB** mostly on CW. QSL via DL9OT, Hans Kriegl, Schubertstr 38, D-76275, Ettlingen, Germany; or via the Bureau.

* **Turkey - TA.** To celebrate the 75th anniversary of the Republic of Turkey the special event station **YM75TA** will be active until 29 October. QSL via TA3YJ, Nilay Aydogmus, PO Box 876, 35214, Izmir, Turkey.

* **Cayman Island - ZF.** Rob PA3ERC and Ronald PA3EWP will be active from 8 to 20 September as **ZF2RC** and **ZF2WP** on all bands, CW and SSB. QSL via PA3ERC, Rob Snieder, Van Leeuwenstraat 137, 2273 VS, Voor Burg, The Netherlands.

* **Samoa - SW.** Sakuma JI3WLT is on the bands as **SWISA** for three years. QSL via JH7OHF.

* **Rotuma Isl - 3D2.** Roberto EA4DX will be active until 19 September as **3D2DX**, all bands SSB. QSL via his home call.

* **Benin - TY.** Sigi DJ4IJ, operating as **TY1IJ**, is good copy on 10.103 MHz CW. QSL via DK8ZD, Jochen Errulat, Berliner Str, 31-35, D-65760, Eschborn, Germany.

* **Namibia - VS.** Ken SM7DZZ will be on the bands for one year as **V5/SM7DZZ**. QSL via his home call, Kjell Grahns, Sodervangsv 153, S-24636, Loddekopinge, Sweden.

* **Chagos - VQ9.** It was reported that **VQ9VK** is active from Diego Garcia Island on CW on 17 and 12 m. QSL via N1TO (ex-AAIOJ).

* **Honduras - HR.** Mike K3UOC (ex-7Z5OO) will be moving to Honduras in September for at least one year on work assignment as Principal of the American School in Tegucigalpa. QSL via N2AU.

* **Togo - 5V.** Marc F5PCU will be active as **5V7FA** until July 1999. He has been heard around 2100 UTC on 14173 kHz. QSL via F6FNU.

* **Algeria - 7X.** Mark ON4WW is in Algeria and hopes to operate soon with the callsign **7X0WW**. Activity will be on CW on all bands. QSL via ON5NT.

* **Western Sahara - S0.** It is reported that Mark ON4WW hopes to return to Western Sahara as **S07WW**. QSL via ON5NT.

* **Iran - EP.** Ali EP2MKO was heard on 15 metres between 1800 and 2000 UTC on CW at the low end of the band. QSL via UA6HCW.

Interesting QSOs and QSL Information

* **D2BB - Fernando - 14164 - SSB - 0548 - June.** QSL via W3HNC, Joseph L Arcure Jr, PO Box 73, Edgemont, PA-19028, USA.

* **4KA6GF - Jozef - 14010 - CW - 0642 - June.** QSL via PO Box 116, Ktoprak, Istanbul, 81031, Turkey.

* **C6A25FV - Delano - 14191 - SSB - 0610 - June.** QSL via C6AFV, Delano Taylor, Box F-3563, Freeport, Grande Bahamas Island, West Indies.

* **CU3AD - Joe - 14265 - SSB - 0615 - July.** QSL via Jose Orlando Fortuna Costa, Grota Venial 1, Lameirinho, P-9700, Angra Do Heroismo, Terceira, Azores Isl, Portugal.

* **A92GE - David - 14243 - SSB - July.** QSL via David, Box 1976, Manama, Bahrain Island, Asia.

* **T77WI - Giancarlo - 14164 - SSB - 0523 - July.** QSL via Giancarlo Montico, PO Box 3,47890 St Marino, Republic of San Marino, Europe.

* **OJ0AU - 14004 - CW - 0400 - July.** QSL via DL6LAU, Carsten Esch, Kreuzweg 22, 21376-Salzhausen, Germany.

* **TG9GJG - Julio - 7010 - CW - 1202 - July.** QSL via Box 24, Guatemala City, Guatemala, Central America,

* **TY1IJ - Sigi - 10104 - July.** QSL via DK8ZD, Jochen Errulat, Berlinerstr 31-35, D-65760, Eschborn, Germany.

* **9K2ZZ - Bob - 14196 - SSB - 0316 - July.** QSL via NN6C (ex-KM6ON) Mike T Jakiela, PO Box 286, Poway, CA-92074 USA.

* **8P9HA - Edward - 14169 - SSB - 0526 - July.** QSL via WA4WTG, Robert Kaplan, 718 3rd Lane, Dania, FL-33004, USA.

* **PJ9I - 14168 - SSB - 0447 - July.** QSL direct only via Ernest Lichtert, PO Box 155, Curacao, Netherlands Antilles, South America.

* **1A0KM - Francesco - 14210 - SSB - 0530 - July.** QSL via IK0FVC, Francesco Valsecchi, via Bitossi 21, 00136 Roma, RM, Italy.

From Here There and Everywhere

* **New Zealand.** Dawn **ZL2AGX**, a friendly lady's voice well known to the followers of the ANZA, Triple Two and YL Monday DX nets, is a Silent Key.

Dawn passed away after a short illness in hospital. Our sympathy goes to her husband Dennis **ZL2BFI**.

* **Amsterdam Island.** Bernard is active until December as **FT5ZI**. He has checked in to the ANZA net lately. QSL via F5PFP.

* **South Korea - HL.** South Korea was celebrating 50 years of the establishment of the Republic of Korea in August. Some of the Korean amateurs were using the HL50 prefix and indicated their call area with an additional suffix number.

* **DX Net.** The Radioaficionados Sin Fronteras (Amateurs without Borders) have a daily net at 1500 UTC on 14128 kHz, run by mostly Spanish operators. A number of African stations are regular check-ins.

* **Mauritius - 3B8.** It was reported that

Jacky **3B8CF** will be ready on 160 metres by September/October.

* **Japan JA.** Frank (also known as Zbig) **VK2EKY** is now active as **7J6AAK/2** on all HF bands. He hopes to be active from Ogasawara (**JD1**) in the November DX Contest.

* **Belarus - EW.** The special callsign **EW50** was used during contests in 1998 by the Gomel Radio Club **EW8WA**. QSL via PO Box 105, Gomel 246050, Belarus.

* **QSL Information.** Andy **UA3DPX** also has a US callsign, **AC6WE**, which he uses for his overseas operations. He was recently active as **5B4/AC6WE** and as **IG9/AC6WE**. If you worked him do not send your card via the Bureau system to the USA; Andy will not receive it because he actually resides in Russia. QSL direct via Box 9, 141400, Himki 7, Russia.

* **QSL Information.** Yoshi **JA1UT** advises that he is the QSL manager for the DXpeditions carried out by **IARV** (International Amateur Radio Volunteers). **IARV** was active in Western Sahara in April 1998 as **S07CRS** and also in Palestine as **ZC6MPT**. Direct QSL via **JA1UT**, Yoshi Hayashi, 4-20-2 Nishi, Gotanda, Shinagawaku, Tokyo 141, Japan.

* **Belarus.** To celebrate the 200th birthday anniversary of Adam Mitskewich, a celebrated poet of his time, the Belarus special event stations **EU200A**, **EV200M** and **EW200M** will be active until 31 December.

* **Canada.** Canadian special event station **CF3FHG** was active on 8 and 9 August celebrating the 125th anniversary of the Highland Games.

* **Macedonia - Z3.** Macedonian stations **Z30M**, **Z31GB**, **Z32GW**, **Z32XA**, **Z32XX**, **Z37FCA** and **Z350GBC** can be QSLed via NN6C, Mike Jakiela, PO Box 286, Poway, CA-92074 USA.

* **Japan - 8J.** The Japan Jamboree station was active during 3 and 17 August with the callsign **8J7BSJ**. QSL via the JARL Bureau.

* **Taiwan - BV.** The 20th Annual Asian and Pacific Jamboree station **BV20APJ** was active from 2 to 9 August. QSL via the BV QSL Bureau.

* **Singapore - 9V1.** Singapore stations are allowed to use the special prefix **9V8** from 18 July until 15 November.

* **Fernando de Noronha - PY0F.** Alexandre **PY0FA** is a legitimate newly licensed amateur. QSL via **PY4KL**.

* **Mongolia - JT.** Special event station **JU60MTZ** was active from 11 July to 31 August 1998 celebrating the 60th anniversary of the Mongolian Railway Board. QSL via **JT1CJ**, Sh Gankhuyag, PO Box 100, Ulan Bator 44, Mongolia.

* **Iraq - YI.** If you had a contact with Hayder **YI11IK**, send your card via **KK3S**.

* **Azores - CU.** Did you know that there are about 300 amateurs on the Azores Islands group? Manuel CU7BA was kind enough to send me a photo of his neat station and a few notes about his homeland. There are nine islands in the Azores group and, accordingly, the prefixes run from CU1 to CU9. Only a few amateurs favour the HF bands, most of them staying on two metres. They also have three QSL Bureaus, CRA, URA, and ARA but he did not give me details about them.

* **DXpeditions and DX Nets.** Have you ever contemplated why organised DXpeditions do not join any amateur DX nets? The DXCC rules refer to "inappropriate ethical conduct in any aspect of DXCC participation" in their rules. Members of a net or list operation automatically have an advantage over those who do not participate in the net. Organised DXpeditions must also QSL via the Bureau system. The organisations and/or sponsors funding the activity make this aspect a condition of their financial support.

The final result is that you have to work the DX station individually under your "own steam" without the assistance of a net controller.

* **VK2 QSL Bureau Address Change.** Please note that the postal authorities in their wisdom have changed the box numbering system at Teralba. The correct address of the VK2 QSL Bureau is now VK2 QSL Bureau, Box 3073, Teralba NSW 2284, Australia.

QSLs Received

3B7RF (1 m - HB9RFO); RK2FWA (4 m - DK4VW); 9M0C (2 m - G3SWH); FO0FI (3 w - K6SLO); V8EA (4 m - JH7FQK); ET3KV (4 m Heinz Vollkoff, PO Box 7633, Addis Ababa, Ethiopia, Africa).

Thank You

Many thanks to the supporters of this column who regularly supply me with the news and information which makes this column possible. Special thanks to VK2CSZ, VK2EFY, VK2KFU, VK2TJF, VK2XH, VK4LV, L40370, VK5WO, VK6LC, VK6NE, CU7BA, JA1UT, 7J6AAK/2, ARRL Letter No 29, The DXCC 1997 Year Book, Ohio/Penn DX Bulletin, QRZ DX, The 425 DX News, The DX News Letter, and The DX News Magazine. ar

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Recently, I came across an article in an English publication concerning Japanese Amateur Awards, which varied slightly from the usual JCC, JCG, WAJA, etc. Temptation got the better of me, so I decided to copy most of that article for our own magazine.

The information originally came from Kouji Hoshi JQ1HBT, who is a member of the JA Awards committee. I have been in touch with Kouji, and he has given his permission to reprint in part or whole.

Do you know how many amateur radio stations there are in the world? The answer is approximately 2.5 million. Of these, about 1.32 million are in Japan. You may realise how large this number is if you compare it to approximately 16,500 in Australia, or 63,000 in the United Kingdom.

There are many Award programmes run by JARL, various Clubs and individuals. Here, I would like to emphasise the ADXA and WASA Awards, issued by JARL, and to invite applications for these awards.

ADXA - Asian DX Award

ADXA is the first JARL HQ award for contact with overseas stations issued since 1970. It is issued to stations who obtain QSL cards from 30 or more countries in Asia.

The countries are defined by the DXCC Country List issued by the ARRL. There are about 50 countries in Asia according to this list.

ADXA was a difficult award to achieve for a long time, due to low activity in most of Asia except for a few countries such as Japan and Asiatic Russia.

Therefore, in 1987, the JARL established the 'ADXA-HALF' award, which requires contact with just 15 Asian countries. Here are the rules:

ADXA and SWL-ADXA

May be claimed for having contacted/heard and received a QSL card from an amateur station located in each of at least 30 Asian countries, including Japan. It follows,

therefore, that to claim the ADXA-HALF, contacts must have been confirmed with 15 Asian countries. Here is the Asian Countries List for ADXA:

1S/9M0 Spratly Islands, 3W/XV Vietnam, 4J/K Azerbaijan, 4L Georgia, 4S Sri Lanka, 4X/Z Israel, 5B Cyprus, 7O Yemen, 8Q The Maldives, 9K Kuwait, 9M2 West Malaysia, 9N Nepal, 9V Singapore, A4 Oman, A5 Bhutan, A6 United Arab Emirates, A7 Qatar, A9 Bahrain, AP Pakistan, BV Taiwan, BY/T China, EK Armenia, EP Iran, EX Kyrgyzstan, EY Tajikistan, EZ Turkmenistan, HL South Korea, HS Thailand, HZ Saudi Arabia, JA/JS 7J/K Japan, JD1 Ogasawara Islands, JT/V Mongolia, JY Jordan, OD Lebanon, S2 Bangladesh, TA Turkey, UA8-9-0 RA-RZ Asiatic Russia, UJ/UM Uzbekistan, UN/UQ Kazakhstan, VR2/9 Hong Kong, VU India, VU Andaman and Nicobar Islands, VU Laccadive Islands, XU Cambodia, XW Laos, XX9 Macao, XY/Z Myanmar, YA Afghanistan, YI Iraq, YK Syria, and ZC4 UK Sovereign Bases on Cyprus. Notable exceptions to this list are Pratas Island and Scarborough Reef, which may not have been gazetted at the time that this information came to hand.

WASA - Worked All Squares Award

The WASA is for confirmed contacts with different Locator Squares, regardless of political borders or countries. Whilst only Asian countries count for the ADXA award, all stations in the world count for the WASA award. These include Maritime Mobile stations in the oceans of the world, giving the operator more chances to work additional squares.

WASA has two versions defined by frequency bands. These are WASA-HF, and WASA-V-U-SHF for the higher bands.

The basic WASA-HF award requires 100 points (different squares) in the bands up to 28 MHz, all worked from the same Grid Locator Square, (first four digits).

Achieving 100 points is relatively easy if you work multi-band. Of course, you can attempt single band operation too. It is better to contact as many/MM stations or rare island operations as possible, because of their unique squares.

The WASA-V-U-SHF is for 50 MHz and above, but it is not so easy compared to the HF award. The WASA award is a young award, introduced in 1992.

All information about JARL awards may be obtained from: JARL Award Desk (Operations Section) 1-14-2 Sugamo Toshima, Tokyo 170-73 Japan; or <http://www.jarl.or.jp>. Fees for all JARL Awards are now 12 IRCs or equivalent.

ar

Spotlight on SWLing

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Holidaying in Queensland

I am writing this while holidaying in Queensland. I have not been able to do much listening, naturally, as I have my mind on other things. I did bring my little Digitor portable but the apartment I was staying at has a lot of steel girders which significantly attenuate the signals. Yet, here in Brisbane, it has been much better. I have been surprised at the differences between reception in Tasmania and here in the sub-tropics.

The higher frequencies seem to propagate better in the daytime than down in the

temperate climes, particularly above 17 MHz. I would not be surprised that 15 metres would be crawling with signals, while in Tasmania only an occasional signal would be heard. Also, the tropical bands are alive and active in the daytime, which is not the case down there. I am hearing Pacific Island stations as early as 0530 UTC, while in Tasmania propagation does not come in until well after sunset around 0830 UTC. I do wish I had more time for further listening.

American Armed Forces Radio

Recently, an unlisted feeder unexpectedly appeared in the middle of the 12 MHz maritime allocation. The program was the American Armed Forces Radio and Television Service from Los Angeles, CA. They have not been heard on short-wave for many decades and are apparently now on dedicated military satellites.

AFRTS were quite puzzled why they were being heard again on HF, for it was without their authorisation. Eventually the source was tracked down to Puerto Rico and could have been related to a military exercise being held off the northern coast of South America. Maybe the SatComm feed dropped out. The frequencies were 12695.5 and 4278.5 kHz, both on USB. Many reported hearing the AFRTS and it brought back memories of when they were easily heard in the sixties.

Short-wave Budget Cutbacks

Budget cutbacks are continuing and the latest station to feel the pinch is Radio Vanuatu just off the Queensland coast. Apparently their FM outlet has been closed and other existing programs have been reduced, but they are still being heard until sign-off around 1100z.

Radio New Zealand also has reduced their output and relays their domestic National program, although news bulletins in some Pacific languages are heard in the morning. From 6 September, Radio New Zealand changes over to 9700 kHz for their evening broadcast and operation on existing frequencies remains unchanged. Sign-off is 1015 UTC. The Web site now is <http://www.rnzi.com>.

Effectiveness of Short-wave

The recent events in Niugini, where a massive tidal wave devastated the northern coast west of Madang, killing thousands and leaving many homeless, again demonstrated the effectiveness of short-wave radio. Radio Australia's unique service in Pidgin carried it extensively while the district station in Vanimo on short-wave was down. It has since been reactivated; I don't have the frequency handy but it is in the 90 metre tropical allocation, possibly around 3.2 MHz.

Here and There

I was able to attend the August monthly meeting of the Sunshine Coast Amateur Radio Club at Bli Bli. It was good to resume friendships as well as forge new ones. I was also pleased to meet Hans Kiesinger, a well-known listener with many years experience.

I do hope that I will be able to meet others in the remaining time I have.

Tahiti is rather spasmodic, I am informed. It is on 15170 kHz in both French and Tahitian and has been heard in our local daytime. Apparently WYFR has also been heard under it at times.

The recent terrorist outrage in East Africa was covered by most media outlets throughout the world for a few days. You could catch up with the latest by tuning into the Voice of Kenya in Nairobi on 4915 kHz. However, here in Australia the best time is around our local sunrise, which corresponds to their sign-off time. Other Kenyan channels reportedly are 4935 and 4885 kHz. Tanzania, which also suffered a bomb, is on 5050 kHz yet is rarely heard here.

South Africa

On the occasion of the World Amateur Radio Day on 19 September, the International Amateur Radio Union, Region I, will broadcast a special program to celebrate the 75 anniversary of the first transatlantic radio amateur contact.

Transmissions will be via SENTECH Meyerton as follows: 1300-1355 UTC, 7205 kHz (100 kW, Southern Africa) and 21545 kHz (250 kW, Europe and Middle East); 1900-1955 UTC, 3215 kHz (100 kW, Southern Africa) and 15205 kHz (250 kW, Europe and Africa); and 2100-2155 UTC, 15205 kHz (500 kW, North America). SENTECH will provide its transmitters for free, as they used to do for the weekly "Amateur Radio Mirror International" of the South African Radio League. For more information contact Hans van den Groenendaal at hans@intekom.co.za.

Conclusion

Don't forget that a supplementary broadcast period comes into effect as from 6 September at 0100z. However, major alterations will occur on the last Sunday in October when daylight saving ceases in Europe and North America.

Well, that is the news for this month. Until next time the best of 73 and good listening!

ar

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Two New Amateur Radio Satellites

I thought I'd have some news this month regarding the full deployment of TMSAT-1 and TechSat-1B, but the commissioning of these new birds is taking a little longer than anticipated. The latest report from the AMSAT News Service follows:

Amateur radio's two newest satellites, TMSAT-1 and TechSat-1B, are doing very well after reaching one full month in space following a successful (joint) launch from the Russian Baikonur Cosmodrome last July. Both satellites are still undergoing initial loading of flight software. Chris Jackson, G7UPN/ZL2TPO, tells ANS that TMSAT commissioning is proceeding rather slowly due to a number of reasons.

Jackson says ground control stations have been operating the downlink transmitter only over certain parts of the globe, mainly Bangkok and Surrey. The satellite is also performing a number of new tasks that have not previously been used before, and this is taking some time to get fully operational in orbit.

On Friday, 7 August the TMSAT gravity gradient boom was deployed following a command from HS0AM, the Bangkok control station. Telemetry data from the deployment showed that the 6.2-metre boom deployed perfectly with less than 1.5 degrees of oscillation from vertical. Currently, the attitude will continue to be improved and testing of the spacecraft payloads will commence.

Shlomo Menuhin 4XIAS reports TechSat-1B is also responding well to ground control commands. 4XIAS tells ANS the satellite recently took its first picture from space, centred over the French Riviera near San Tropez. The image is available for viewing on the world-wide web using the URL: <ftp://ftp.amsat.org/amsat/images/TechSat/Cam2.jpg> (I've seen this picture and it's worth a look).

Both satellites are expected to be available for general amateur use shortly. Responding to a question from Keith Baker KBISF, Executive Vice President of AMSAT-NA, both the TMSAT and TechSat teams have answered they wished OSCAR numbers to help designate their new spacecraft. KBISF also passed along congratulations from all AMSAT-NA members to both teams on their outstanding success.

The assignment of consecutive OSCAR numbers to new Amateur Radio spacecraft is a tradition that dates from the launch of the very first Amateur Radio Satellite, OSCAR 1. In order for an OSCAR number to be assigned, the satellite must successfully achieve orbit and one or more transmitters must be successfully activated in the Amateur Radio bands. Then, the builders/owners of the satellite must formally request that a consecutive OSCAR number be assigned to their satellite once the first two requirements are accomplished.

Speaking for the TMSAT team, Chris Jackson G7UPN/ZL2TPO said that "I have spoken with our Thai colleagues and they are happy for TMSAT to be named TMSAT-OSCAR-31." Likewise, Shlomo Menuhin 4XIAS, speaking on behalf of the TechSat team, said: "We at the TechSat project agree to all the terms and would be glad if the TechSat-1A will have the OSCAR number GO-32. The letter G stands for GURWIN."

KBISF has informed ANS that, in the light of this information, it is now appropriate to refer to the two new amateur satellites as 'TMSAT-OSCAR-31' (or simply TO-31) and 'GURWIN-OSCAR-32' (or simply GO-32) respectively [end of quote from ANS]

It will be seen from the above that things are progressing nicely and it is very likely that by the time I write the next column both satellites will be in normal service. This will give the digital satellite users five such birds to contend with and it will be interesting to see how things turn out as far as usage is concerned.

At present, UO-22 carries all the international packet radio message forwarding as well as its share of general amateur message traffic. KO-23 carries most of the load of store and forward messages and bulletins, with KO-25 coming in a close second. The popularity of KO-23 stems mainly from its 1300 km orbit which, compared to the 800 km orbit of KO-25, gives it a much wider footprint and longer access times.

Passes of 20 to 25 minutes are the norm for KO-23 and this increases the downloading capability of ground stations considerably. With five such birds in orbit it will depend mainly on orbit characteristics which ones will carry most traffic in the future. With orbit apogees of about 820 km, TO-31 and GO-32

AMSAT National Co-ordinator
Graham Ratcliff VK5AGR
E-mail: vk5agr@amsat.org
AMSAT Australia Net

The AMSAT Australia net is held on 80 and 40 metres LSB each Sunday evening. During daylight saving time in South Australia the net is on 7068 kHz +/- QRM with an official start time of 1000 UTC (with early check-ins at 0945 UTC). During the rest of the year, the net is on 3685 kHz +/- QRM with an official start time of 0900 UTC (with early check-ins at 0845 UTC).

AMSAT Australia Newsletter and Software Service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand, and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia
GPO Box 2141
Adelaide SA 5001

Keplerian Elements

Current keps are available from the internet by accessing the AMSAT FTP site, <ftp.amsat.org> and following the sub-directories to "KEPS".

will be in the same class as KO-25, so many people may still use KO-23 as their preferred satellite.

The higher inclination of the two new birds may favour stations at higher latitudes but the large footprint of KO-23 covers the poles even though its inclination is only 66 degrees. Only time will tell.

A New Space Telescope

It was announced recently that a new orbiting space telescope was being planned. The project, called the Microvariability and Oscillations of Stars project, or MOST, will bring together teams from Canada and the United States to design a low-cost, 50-kilogram satellite.

This will be a really small device compared to the HUBBLE Space Telescope. The satellite's telescope, no bigger than a pie plate in diameter, will be secured to a suitcase-sized platform. A new, lightweight gyroscope makes the project possible.

Although tiny, the satellite and its telescope will be a powerful tool to help astronomers probe the internal structures of stars to determine their ages. I guess our challenge will be to detect such a tiny satellite. Its size puts it in the same class as some of our amateur satellites as far as visibility is

concerned. Perhaps, under the right conditions of reflected sunlight, it will be visible to the naked eye.

“Voice” Satellites?

I recently attended the Convention at Albury, NSW. The AMSAT badge usually attracts a few questions and this time was no different.

The main thing people wanted to know was, “How many voice satellites are operating at the moment?” That one usually prompts an evasive reply. One, because I don’t work the analogue satellites much; and two, because the situation is quite dynamic. Changes happen almost day to day.

It does show, however, that there is a great deal of interest in the general amateur community for this type of operation. Newcomers will think of the voice or analogue modes first. Sadly, the present situation is not good for newcomers. OSCAR-10 is working, but unreliable. As I write this column it is virtually unworkable even with high gain antennas. Past experience shows it should come good in a few weeks and be relatively easy to work.

The Russian RS series of satellites, which for so long afforded the newcomer an easy and satisfying way into the game, have failed one by one and only RS-12 remains reliably in operation and unsuitable for a newcomer.

The Fujis are probably the best bet at present but they require 70 cm SSB capability and this puts a lot of people off. So, RS-12 remains as the only reliable “easy-sat” for beginners. Even RS-12 mode “A” requires SSB capability on 2 m and 29 MHz and this, too, puts a lot of people off.

I don’t know what the answer is. The march of technology means that the designers of new amateur radio satellites have to do some crystal ball gazing to try to anticipate the state of technology in, say, five to 10 years time from when the design phase of a new bird begins. This usually means that modes like mode “A” and FM and bands like 29 MHz and even 2 m are very low on the priority list. Sadly, it is becoming more difficult to advise newcomers of an easy learning track into amateur radio satellites. I believe that planners of the amateur radio component of the International Space Station will address this problem.

Speaking of the Fujis, it was reported recently that the Fuji-OSCAR-29 satellite will remain in Mode JA as controllers investigate the spacecraft’s on-board computer bit errors. The command team is asking amateurs to monitor the FO-29’s CW telemetry and report when the telemetry value for channel 5 changes from 00. Channel 5 is the fifth telemetry item sent after “HI HI” in the telemetry sequence.

Intruder Watch

Gordon Loveday VK4KAL
Federal Intruder Watch Co-ordinator
Freeport No 4, Rubyvale QLD 4702
Tel: 07 4985 4168
Packet: VK4KAL@VK4UN-1

The P7A station on 21.159 kHz (see summary below) has been operating for years, and we get no further than these details. Can any observer group come up with any further information as to its location?

For Region 3 Observers

In VK we have suffered from “Numbers Stations” and have wasted a lot of time trying to make sense of them; no doubt other observers have also.

WIA/IARU Monitoring Summary for July 1998

Freq	Date	UTC	EMM	Details
3.559	2106	1230	A3E	Radio Korea Pyongyang, poss ID
7.0395	1806	1040	A1A	SLB “F&S” Navigational CIS
7.0980	0107	0051	A3A	UiBC, Jakarta, mentioned often
10.1315	2407	0500	N0N	UiCAR, sum FIB nil sh & bd rate
10.150	2606	1223	A3E	UiBC Chinese language
14.1265	3007	daily	FIB	UiMUX, 220 hz/144 bds. 3 ch rev/pt
14.250	2306	2000	A3E	Voice of Russia, H2/7.125
18 075	0707	0625	A3E	UiBC SE Asia non amateur
21.159	2006	0525	A1A	P7A Calls P8M shifts to 21.163

WIA QSL Bureaux

The official list of VK QSL Bureaux. All are Inwards and Outwards unless otherwise stated.

VK1	GPO Box 600, Canberra ACT 2601
VK2	PO Box 3073, Teralba NSW 2284
VK3	40G Victory Blvd, Ashburton VIC 3147
VK4	GPO Box 638, Brisbane QLD 4001
VK5	PO Box 10092, Gouger St, Adelaide SA 5000
VK6	GPO Box F319, Perth WA 6001
VK7	GPO Box 371D, Hobart TAS 7001
VK8	C/o H G Andersson VK8HA Box 619, Humpty Doo NT 0836
VK9/VK0	C/o Neil Penfold VK6NE 2 Moss Court, Kingsley WA 6026

Reports should be directed via internet to lab@jarl.or.jp. FO-29 will be in constant sunlight through mid-August. The operating

Most of these broadcasts heard in Australia are either five figure or letter groups which form the “body” of the message. They are used by such agencies as KGB, CIA, MI6, Mossad, etc to convey secure information and instructions to their agents in the field in a simple and anonymous way through the agent’s short-wave receiver. The mode can be AM, USB or both. They appear at any time and on any frequency, including our amateur bands.

Help

An unconfirmed listening report states that North Korea is using 14.055 MHz for a feeder service from Pyongyang to one of their transmitter sites. The times heard are from 0400 to 0800 UTC; the program is possibly in Japanese!

Voice of America

VoA had a slip up on 13 July when they started transmitting on 14.205 MHz, causing havoc to an existing amateur SSB net from 2200 to 2228 UTC, when it re-appeared on its licensed frequency of 15.205 MHz!

ar

schedule may be changed in late August to cope with the rising temperatures sunlight is expected to cause on the spacecraft. ar

VHF/UHF An Expanding World

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All times are UTC

VHF Doldrums?

Whether it's the cold weather of winter, the change in weather patterns, or for whatever reason, little activity has been reported from VK on any bands.

I know there is considerable construction activity taking place, especially for the microwave bands up to 24 GHz, in readiness for the forthcoming summer when, hopefully, conditions will allow the new equipment to be successfully used.

First VK5 to VK6 QSO on 144 MHz

In the light of this situation, I have delved into my history files and extracted details of the first two metre contact between VK5 and VK6, that of Clem Tilbrook VK5GL and Rolo Everingham VK6BO. This occurred on 30/12/1951 at 0712 UTC with signals 5x5. VK5GL used 15 watts and VK6RO 45 watts, both in the AM mode, propagation mode Es.

Clem wrote: *My equipment was as follows - Transmitter: 6J6 crystal oscillator about 8 MHz (Mcs in those days) doubling in the second part, plus another tube as trebler into a 6V6 about 48 MHz. This was driving an RK34 push-pull trebler to an 832 final at about 15 watts. (Clem says he still has the final unit!)*

The modulator was a pair of 6V6s in push-pull using plate modulation via a Ferranti 1 to 1 output transformer as a modulation transformer.

The antenna was a four over four at 35 feet, fed with open wire line.

Clem said the receiver was featured in *Amateur Radio* magazine in early 1951 and he still has the converter.

It was called a 6 and 2 metre converter which used a 6SH7 as a crystal oscillator and 6J6 trebler when switched to the two metre position.

This particular unit had two front ends, one each for six and two metres, with a 6C4 cathode follower to tune into a receiver

covering 3 to 7 MHz. By using a 9.400 MHz crystal, the fifth harmonic at 47 MHz was 3 MHz away giving 50 to 54 MHz coverage. By switching in a further trebler this gave 141 MHz and 144 to 148 MHz coverage by tuning from 3 to 7 MHz.

The two front ends were the same and consisted of a 6J6 push-pull neutralised RF amplifier to a 6J6 push-push mixer - all home brew.

The letter from Rolo said: *Clem. You beaut! Transmitter: VT52 (EL32) oscillator at 8 MHz, VT52 tripler to 24 MHz, 6AQ5 doubler to 48 MHz, 832 tripler to 144 MHz, 815 PA at 144 MHz.*

Receiver: Converter - a 6B0 "Dagwood Sandwich" consisting of a 6J6 neutralised triode push-pull RF amplifier to an RL37 cascade, CV6 mixer, CV6 oscillator on 132.5 MHz, 6SH7 IF amplifier at 11.5 MHz, into a "little portable receiver!"

The little portable rig consisted of a 6J8GA mixer, 6G8G IF and AVC, 6H6 noise limiter, 6SN7GT cascade AF amplifier (yes, half the 6SN7GT to a five inch speaker), 6J5 BFO.

The antenna was a five over five with full-wave spacing of the bays. Wide spaced elements, folded dipole all made from 5/8 inch conduit! The top bay was 53 feet above ground and the height above sea level a further 35 feet. Trx a lot. 73s, Rolo.

Rolo gave his latitude and longitude bearings and on my computer program his grid locator at Bassendean is OF78xc.

At the time this contact was quite an achievement on two metres over a path distance of 2120 km. Since then, the number of stations to work Perth from Adelaide has risen but not to high numbers. It has never been an easy path to Perth and most contacts have been via Es. Recently, however, a good opening saw the path bridged via tropospheric propagation. Nevertheless, such a contact remains elusive to many.

A Plaintive Call ...

Mike ZL3TIC issued the following plaintive cry on the Reflector recently: Wednesday 29 July 1998: *Guys - the time is 0130 and the band is wide open to ZL1 and ZL2. I'm also hearing 45.240, 250, 260, 46.170, 240, 55.240, 260, 57.240 all 5x9+. I'm calling and calling ... no one home! Where is everybody?*

Six Metres

I recently received a post card from his family which conveyed the simple message that Cliff Betson ZL1MQ, had passed away on 30 March 1998. Cliff was one of the pioneers of six metre operation in New Zealand, dating from the 1940s. He wrote the monthly *The VHF-UHF Scene* column for *Break-In*, the journal of the NZART. Cliff and I exchanged pre-publication versions of our columns for

several years. I worked him from time to time on six metres, the first time in 1963. Cliff will be missed not only by readers of these columns but by his many radio friends.

Emil Pocock W3EP in *World Above 50 MHz* reported: *The first transatlantic sporadic-E propagation appeared on 50 MHz for this year on 4 June, when KP4EIT and WP4O worked CT1DNF around 1130. KP4EIT added OZ and G calls to his log later that morning. VEIPZ made it to CT1CAD at 1242 for the first transatlantic contact from mainland North America.*

Europeans appeared in American logs on at least nine other days in June, as summarised in the table below. The table shows the extreme times for each identifiable opening, with participating call areas and country prefixes. Not all US and Canadian call areas shown necessarily worked all the European countries shown and vice-versa. In some cases, a call or a country appears because of a single contact.

Date	Time	Call areas and countries
4	1130-	KP4, VE1-CT, OZ, GW
6	1150-1215	W1,2,3-EH
10	1800-1810	VE1IW-GB3MCB/b
14	?	W5KFT-CT3FT
19	1030	VO1ZA/b-GJ4ICD
19	1930-2315	VE1,9, W1,3-G, PA, OZ, SM, OH, DL, SP, OE, S5
22	1205-1320	W1,3-CT, EH, I
23	1130-1530	W1,2,3,8, VE3-CT, EH, I
	1515-1610	W8,9, D8-DL, 9A, OK, SP
	1830-2000	VE1,9, W1,8-CT, EH
24	1400-1515	W3,4,5-EH, G, ON
	1445-	KP4-G
27	2100-2250	VE1,9, W1,4-CT, EH, EI, G, GW, GM, GD, PA, ON, DL
28	1545-2330	VE1, W1,8-EH, CT
29	1610-1700	W1-CT, EH
	2100-2245	W1-CT, EH

Most of the openings in June were marginal affairs. Signals were often very weak and in and out of the noise. As a consequence, the majority of the transatlantic activity took place on CW. On several days, only a few of the best equipped and located US stations were responsible for the bulk of the contacts. As has been the case in past years, stations in the Maritime provinces and New England seemed to get the lion's share of Europeans.

June 23 was an exceptional day, because the usual Maritime and New England stations were not the stars of the show. They were laboriously pulling CT, EH, and other stray Europeans out of the noise, but the most spectacular contacts were made from the Midwest. George Dowell, K0FF (EM49) in Missouri, worked 9A8A (Croatia), OK1DDO (Czechoslovakia), SP6GZZ (Poland), and seven German stations in a single 55-minute CW run. The Europeans were 559 to 599 into

Missouri, but East Coast stations could not even hear what George was working. Many were straining hard, as these were rare catches even for the most active DX hounds.

Europe was not the only source of countries available to US and Canadian DXers. Widely worked in June were FP5BU, KP4EIT, WP4O, and others from Puerto Rico.

Other parts of the world shared in 6-metre sporadic-E DXing. On June 28, Hatsuo Yoshida, JA1VOK (QM05), hooked up with JT1KAA (ON37) in Mongolia at about 3100 km and had QSOs with UA0CQ and UA0-ZBK (PN78) in Russian Siberia.

Finally, the list of new and rare countries Europeans worked in June is just astonishing. Among the more interesting catches reported by Six News, the OH2BUA WebCluster, SM7AED, SM7FJE, G3UPS, and G3FPK, were these European countries: Jan Mayen (JX7DFA), Faeroe Island (OY3JE), Macedonia (Z32ZM), and Liechtenstein (HB D8LL). From Eastern Europe, there were many stations from Russia (UA-UI and RA), and the Ukraine (UR-UZ), Belarus (EW8DD and others), and Moldova (ER3R). Countries reported from the Caucasus and further east included Georgia (4L5O), Armenia (EK6-AD), and Kazakhstan (UN3G), the latter on the Chinese border! From the Middle East, Europeans vied for several stations from Israel (4X and 4Z), Jordan (JY9QJ), Lebanon (OD5RAK), Turkey (TA7V), and Oman (A45ZN).

Japan to W5

A number of sources have mentioned contacts between W5 and Japan. On 20/7/98 at 0049 N5JHV worked JA1RJU, followed by J11UHZ, JR2HCB and JA2EMQ until 0111. 0212 N5JHV worked JA4KFA and JA4DLP.

After a break of 17 years, JA and W5 have worked. At 0035 N5JHV began hearing two distinct carriers on 49.750. He called CQ DX on 50.110 until at 0049 he worked JA1RJU, followed by the others mentioned above. Distance to JA4KFA is about 10,260 km.

Equatorial Guinea

Alan 3C5I continues to appear in the overseas news. He reports: On 27/7 a great opening from 3C to Europe, very strong signals! Heard OZ5QF belting through 5x9+ at 1712 but could not break in. Worked SM7WDS, IW2AET, DL4IBD, DL6AMI, DF5LQ, SM7FJE, SM7AED, IK4FMT, ON7TN, PE1PZS, IZABEZ, OZ8RW, DJ4SO, IK3HHJ, OZ1LO, IK4GME, DL9USA, DL0KCT, DL3HRM, DL3DXX, EI7GL. The band dropped out at 1735.

Sporadic E on 144 MHz

Two metre sporadic E in Europe has also been

spectacular, according to Norman Fitch G3FPK, and David Butler G4ASR, who write VHF columns for *Radio Communications* and *Practical Wireless* magazines in England. There were openings on 3, 5, 6, 11, 12, and 18 June across much of Europe.

The most spectacular session was on 3 June, when stations in the south of England hooked up with SV1OH and SV7ADJ (Greece), SV9/DC9KZ (Crete), and 4Z5BS, 4X4MO and other Israelis on 2 metres. Others in the north of England made it to Bulgaria and Romania. The longest contacts were in the 3500 km range. On 11 June, many northern Europeans worked North African stations CN8HB (Morocco), EA9MH (Cuba) and 7X2DS (Algeria), in addition to numerous Spanish and Portuguese.

Today's News reported that on 6/7 at 1315 G4CQM copied the Canadian beacon VE1SMU/H on 144.300 MHz. Distance about 4376 km. Perhaps the time is nearing when a transatlantic two metre contact will eventuate.

Southeast Asia is the world's hot spot for sporadic E, but the 18 days of 144 MHz E-skip in Japan during May and June were unusual. JR4ENY reported over the European VHF reflector that there were a dozen distinct openings on 1, 8, 15, 17, 19, 22, 23, and 24 May averaging about an hour each. During the first three weeks of June, JR4ENY reported another dozen openings on 1, 6, 7, 12, 13, 15, 16, 20, and 21 June.

At least five of the openings included contacts with adjacent Korea or Taiwan, which is within single-hop distance from much of Japan. Hatsuo Yoshida JA1VOK also reported an unusual two metre SSB contact with JA0SUQ/JD1 on 24 May. Minami Torishima is an island 2000 km south-east of Japan in the Pacific Ocean and counts as a separate DXCC country. This may be a first on two metres between the two countries.

First QSO on 411 GHz

The German magazine *DUBUS* (II 1998) reports that DB6NT and DL1JIN completed a contact on 411 GHz on 6 January over a path of 50 metres. Yes, it is still radio, but at a wavelength of less than 1 mm, about the thickness of a piece of cardboard. Atmospheric absorption is severe at this frequency, so it will be interesting to discover just how far the distance can be pushed. The technical difficulties in building equipment for frequencies of 300 GHz and above are daunting.

The DB6NT transceiver begins with a stabilised 119 MHz crystal oscillator and a multiplier chain to produce a 20 mW signal at 45.6 GHz. This is fed into a wave-guide with a Russian beam-lead Schottky diode

fitted into its end, which serves as a 9x multiplier on transmit and a harmonic mixer during receive. The 150 mm (about 6 inches) dish antenna is fed by the wave-guide to a Cassegrain sub-reflector.

The DL1IN design is slightly different. It uses a 54.1 GHz Gunn oscillator stabilised by a 80 MHz crystal oscillator and phase lock loop mixer. The 54.1 GHz signal then drives a Schottky diode on the end of a four wavelength probe. The radiation from the probe is reflected through a Fresnel lens with a 40 cm focus.

24 GHz in Queensland

It seems 24 GHz is beginning to move in Queensland. I note that Gerald VK4ZSG has been in touch with David VK5KK regarding availability of PCBs for that band.

Gerald added: *I am more interested in construction, as an end in itself, than the pursuit of DX, the milli-metric stuff attracts me as mountains attract fitter men than me. There are a couple of other chaps up here interested in 24 GHz. I have two SHF 24 GHz Gunn diode modules and 30 cm dishes and am making up the Vol. III RSGB 10/24 GHz IF Rx/Tx modulators to get the hang of it. Des Clift VK5ZO, has come into the act, getting a couple of the same modules and redesigning some of his older phase-lock loop stuff following my questions on frequency stabilisation given attention by W4UCH in his "The Gunplexer Cookbook".*

Ultimately I want to use SSB, of course, but have to walk before I run. However, past experience has demonstrated that getting parts sometimes takes many many months so one has to think ahead a bit.

Meteor Showers

Ron Cook VK3AFW made this comment on the Reflector: *Did anyone make use of or even see the meteor shower earlier this week? [The first week of August]. There were reports of unprecedented numbers of meteors observed in Queensland and of one which lit up the whole of Sydney!*

Unfortunately, work commitments prevented me from being around at the right times. Random meteors appear to have been more common for the last two weeks on those occasions I checked. [Any comments? ... VK5SLP.]

AXM, Weather Maps, Etc

Apropos my article last month about the possible loss of weather map information, I was interested to receive a reply from a former acquaintance, Brian Tidemann, now VK3BCZ, ex VK5TN.

Here is the point of relevance. Please send your survey responses no later than 31 December 1998 marked for attention of

SRRT, to the Bureau of Meteorology by either of the following methods:

Mail: SRRT, National Meteorological Operations Centre, Bureau of Meteorology, GPO Box 1298K, Melbourne Victoria 3001. Fax: 03 9662 1223.

Please substitute Box 1289K for 1298K as written. He did say though that, "its a pretty big box, however, so I guess the mail man would probably not be confused for too long!"

Those contemplating a submission please note the new box number.

Brian also went on to say he had fond memories of the one metre days of the 1950s where he cut his VHF teeth, the same as I did, so we do have a few things in common.

From the UK

Ted Collins G4UPS, in his monthly notes, continues to rack up countries. For the first six months of 1998 he has worked 58 and heard 66 countries. That kind of scoring is somewhat different from the experiences of VK amateurs. In that time I'm not sure whether anyone here has worked a completely new country on six metres.

It's little wonder so much two metre Es is being worked in the Northern Hemisphere when there has been so much short skip on six metres. Ted mentions a case on 3 June when he worked three stations in PA at distances between 676 and 734 km.

Ted mentions Tony A45ZN in Oman having a wide range of QSOs including BV2SR, DL9USA, EK6AD, G3HBR, JS6CDB, LZ1AG, OZ3K, SM5HJZ, SP6GZN, SV7BVZ, S57A, UR4LL, VR2XMT, V73AT, YO7AOT, YT1AU, Z22JE, 5B4/EU1AA and 9A8A. In there I notice four stations in the Asia/Pacific area, but so far he does not seem to have crossed the equator in this direction.

Closure

It's certainly a quiet period here in VK. Nothing really new or exciting to report. Conditions could pick up during the coming equinox but we may have to wait until March/April 1999 for something worthwhile to happen. In the meantime we keep listening to the regular signals between 45 and 50 MHz from the north, work the occasional JA - usually into VK4 or VK8, or look for tropo signals on 144 MHz and above.

Closing with two thoughts for the month.

1. An author retains the singular distinction of being the only person who can remain a bore long after he is dead, and

2. How pleasant life would be if people with money used it the way people who don't have it would use it if they had it.

73 from *The Voice by the Lake*.

ar

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Limited Amateurs

In recent times we have seen some relaxation in the rules and regulations governing the radio community as a whole.

I refer, in particular, to the removal of individual CB licences (replaced by a Class Licence) and to the establishment of the Novice Limited Licence or "H Call" as we've come to know it. Two giant steps for the radio fraternity, but even more so for the ACA and the WIA. Their efforts and the resultant outcomes are to be applauded.

The latter outcome recognises a willingness on the part of authorities of influence in the communications industry to make concessions, to compromise, in an endeavour to "modernise" the structure of our hobby, amateur radio. The Novice Limited Licence has afforded a new entry point into amateur radio for those who do not have a need nor a desire to operate CW.

But what of the large number of current licensed Limited amateurs, who are similarly disposed towards CW, yet have gone on to qualify in AOCIP theory, only to find that they cannot even talk on HF (except on 10 m between 29 MHz and 29.700 MHz); which means, in most cases, they cannot even take part in Club Nets, the majority of which are held on the Novice segment of the 80 m band.

Leaving aside VHF and UHF for the moment, let us compare the spectrum privileges of a Novice amateur with that of many a highly qualified Limited Licensee.

Novice, 80 m, 3.525 MHz to 3.625 MHz:
Limited - Nil.

Novice, 15 m, 21.125 MHz to 21.300 MHz:
Limited - Nil.

Novice, 10 m, 28.100 MHz to 28.600 MHz:
Limited - 29.0 - 29.700 MHz.

Surely, if one recognises that there is a need to accommodate within the framework of amateur radio a licence without CW, there is just cause for the upgrading of HF spectrum privileges for Limited amateurs, many of whom have been Wireless Maintenance Mechanics in the services, while others are

qualified Radio Technicians who have been running their own businesses in the Communications Industry for years.

They frequently pose the question, "Why have I to be competent in 5 WPM CW to be able to talk on HF?"

Why indeed!

Roy Mahoney VK4BAY
3 Marberry Street
Manly West QLD 4179

We Need More Amateurs!

All the time we are hearing and reading of the immediate need for more entrants into the amateur radio fraternity.

What is required is a concerted Australia-wide program generated by and fully supported by the WIA Federal.

So far there have been some attempts to address this problem, on an ad hoc basis by individuals. However, the Federal Body has not shown any real interest or leadership with this initiative.

From my involvement in ARDF International over the last eight years, it has become apparent that this is the vehicle that will go a long way to solve our problem of dwindling numbers. The most important aspect is that with ARDF we can encourage YOUNG people into becoming Amateurs. ARDF has been proved to be popular in Thailand amongst youngsters.

Already there are a number of Guide/Scout groups instructing their members in the art of ARDF or, if you like, "Fox Hunting", with good results.

There are reasonably priced kits available for both 2 and 80 metres within Australia, and with the help of Amateur Radio Clubs the younger age group could be encouraged to construct their own equipment.

There are two International ARDF events coming up, the Region 3 Championships in South Korea in 1999 and, hopefully, the World Championships in the year 2000 in Australia.

Wally Watkins VK4DO
Strathdickie

[While I respect Wally Watkin's view of WIA Federal's activities, he is quite wrong in saying no real interest or leadership has been taken in regard to encouraging new entrants to our hobby. The Federal Council and Executive are only too aware of the need to increase participation in amateur radio and one of the most productive areas is via the youth of the country. However, the various State Divisions have a vital role in this activity and it is in conjunction with them that WIA Federal is tackling this task. Certainly, ARDF is a wonderful way to introduce amateur radio and one that I personally fully support.]

Peter Naish VK2BPN
WIA Federal President

Just Testin' the Water - 2 m Mobile Operators.

For a number of years I have been tempted to ascertain from 2 m mobile users their opinions on just how hard it is these days to make mobile contacts when travelling throughout the country. This situation has been allowed to develop so that mobile operation in country towns and areas is almost a "non-event".

I KNOW I am not the only mobileer that has had to face up to the following maddening situation when embarking on long trips into country areas of Australia.

I have been licensed for a heck of a lot of years and all of this time I have enjoyed operation on 2 m and HF mobile operation. However, as I think many will agree, the situation now exists in ever so many country areas where the following scenario applies:

An enthusiastic amateur arrives in a town where he knows there are many familiar callsigns located. He does not wish to leave the town or area without at least letting the locals know of his presence. For those that are interested, a quick "eye-ball", and maybe a beer at the local could easily follow.

However, it usually does not work out this way. Whilst it may be known that a number of amateurs are active in the town or area, there is NO WAY that the visitor can ascertain just how to contact this hidden brew of fellow operators, may of whom he may know personally. Most country amateurs have the habit of "parking" on a repeater, which may be located hundreds of km distant (and well out of the range of the poor ol' mobileer).

Calling on a simplex frequency would be like fishing in a muddy pond. The mobile operator simply does not have a clue as to how to make his presence known in the town or area. With probably many hundreds of dollars worth of radio equipment hanging from his dashboard, it is not unusual for the visitor to the area to draw a blank and proceed with his visit without making any contact with the locals. Apart from the visitor simply wanting to make a social contact with the locals, it is often the case that information is required concerning road conditions or simply directions to get to a particular place.

Unless one is involved in country mobile 2 m work, the average band user is not aware of the above-mentioned ridiculous situation. I can assure readers that the above scenario really does apply, and it can be most frustrating.

As a suggestion, what do readers think of the idea of country base stations making an effort to use a common simplex frequency for local operations (say 146.500 MHz). Sure, it would mean constructing reasonable omnidirectional aerials to get sufficient local coverage, but it would provide a means where

Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:-

CE	MOULE	L50338
F R (Frank)	JOHNSTON	VK2ADU
N J (Neil)	STEWART	VK2GS
F J (Frank)	VAN DER DRIFT	VK3COF
P W (Peter)	HEBARD	VK3XK
J O (James)	KELLY	VK3YSW
L H	WELLER	VK3YX
PJ	ANDERSON	VK4CPA
H B (Harry)	ANGEL	VK4HA
D (Don)	CHRISTIANSEN	VK5ADC
RI (Robert)	SCOTT	VK5CZ
JH	CARRUTHERS	VK5HC
RF (Ron)	DENT	VK6UF
P D (Peter)	FRITH	VK7PF

Neil James Stewart VK2GS

Neil was one of our quiet achievers, a very quiet but gentlemanly perfectionist, so much so that it was one heck of a battle for me to find out much more of his past than I have learned in the quarter of a century that I have known him.

This is typified by the fact that he did not do anything in regard to getting his DXCC Open and CW until shortly before his death; he was too busy communicating and doing other things to worry about such formalities!

Neil was born at Abbotsford in 1931. He became dux of his local primary school,

visitors could at least make reliable contact when in country areas.

For those who wished to make a particular long-haul contact, that distant repeater would naturally provide the solution. However, if the simplex frequency monitoring was adhered to, it would open up the band activity to include a lot more people who shared similar interests. Even mobiles passing each other on the highway would greatly benefit from the usage of a common simplex frequency.

I feel that if something is not done to widen the scope of operation on two metres, it won't be too far into the future that interest will

already showing signs of becoming a perfectionist. He gained his early knowledge of radio from his father, who was an electrical engineer. His interest in radio continued at the local Air League, but there were so many other interests in his life, such as motorcycling, rowing and shooting, that he did not gain his Amateur Licence until 1957. He held his current call from 1970 onward.

Neil's working life was spent as a photographer with News Limited, a total of some 37 years during which he covered all aspects of the industry from cheesecake to news to sport, including his coverage of the 1956 Melbourne Olympic Games.

Some of his sporting shots involving motorcycles were hung in The Hague. Finally, in 1971 he moved indoors to become Quality Controller of the Photographic Section, where he stayed until his retirement in 1990.

Neil's amateur radio interests centred on HF and CW, mainly on twenty and forty metres. He was also a stalwart of six metres on FM. Two metres was reserved for packet and, judging by the reams of paperwork generated, he was extremely active at it over the past few years.

He will be sadly missed by his acquaintances on these diverse media.

Neil became a Silent Key on 2 May 1998, and is survived by his wife Pam, three sons - Graham VK2NKY, David and Andrew - and seven grandchildren. Vale Neil VK2GS. Bob Yorston VK2CAN

Frank Van der Drift VK3COF

Born 17 October 1928, died 18 July 1998

Frank was a long and active member of the EMDRC, who became licensed in Australia in 1978.

For many years, twice a week, he talked to his brother Nol PAONOL, who is still residing in Holland.

One of Frank's other pastimes was his love for classical music; listening to Bach, Beethoven and Mozart, which often gave him peace of mind during difficult times.

simply disappear, and the lower usage of a much sought-after band will cause it to be lost to the commercial users, who are hungry for our little-used VHF/UHF allocations.

Does anyone have any thoughts on the above comments? Maybe everything is OK the way it is, and it's only me that is out of step!

How about some other opinions on the subject?

Sid Ward VK2SW
33 White Avenue
Wagga Wagga NSW 2650

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During the last five years he especially enjoyed his membership of the Probus Club, an activity which he and his wife Kaye enjoyed very much: so much so, in fact, that Frank was elected President of that organisation in 1997.

Honesty, integrity, tolerance, and reliability are virtues that are highly regarded in an individual, and Frank had all these attributes in abundance, a result not only of his strong religious convictions, but also of his high moral principle and character. Unfortunately, Frank's youth was clouded by the trauma of World War 11.

During the 40s, instead of having a happy and carefree time as a teenager, it was a time of hardship and a time of trying to stay alive, very often travelling on his push-bike around the countryside to farms, to try to collect and often beg for food for his family.

Finally, on 18 July Frank lost his fight with the cancer that had invaded his body. It was a fitting tribute that many of his friends from the EMDRC were in attendance at his funeral. [Summarised from the eulogy delivered by Harry Loder VK3AXJ]

Carl Schlink VK3EMF
President
EMDRC

Richard Charles (Dick) Keeshan VK4GOR

Dick VK4GOR passed away on 15 July 1998 aged 78 years.

Dick served with the RAN as a telegraphist during WW2 on the corvette "Ararat", the Q class destroyer "Quiberon", and shore stations at Madang and Brisbane.

Most of Dick's working life was in the electrical wholesale trade and after retirement he joined the Maritime Museum in Brisbane to enjoy his interest in telegraphy.

In 1990 Dick obtained his amateur radio callsign and joined the Brisbane Amateur Radio Club where he later served as President for two terms, as well as other committee positions including Club Morse tutor. Dick also contributed to amateur radio, being a WIAQ councillor for a period.

His love for CW was evident as the only time a key or paddle was not used for communication was when Dick would use a microphone to join in the Club two metre FM Net on Wednesday evenings.

VK4GOR will be sadly missed. He is survived by wife Irene, and sons William and Dennis.

Ron Everingham VK4EV
President
Brisbane Amateur Radio Club

Robert Ivor Scott VK5CZ

Ray VK5CZ passed away in his sleep on 20 June 1998 at the age of 78.

As did many of Ray's generation who served with the RAAF, he became involved with radio and with amateur radio as G3CZ.

After the war he married Iris and returned to Adelaide to set up home and acquired the call VK5CZ. From the Prospect area Ray was known by his 'BBC' radio voice.

All of his equipment was home brew, or of military origin, and operated through the 50s up to 1970.

In later years radio had to play a lesser part of his life, but was never forgotten.

Michael Scott VK5ZMD

Ronald Francis Dent VK6UF

Ron passed away on Tuesday, 30 June 1998 at his home at Wyndham in the Kimberleys, a place he loved.

Ron was known to many amateurs, operating from Christmas Island as VK9XJ. A dog pile could be expected when he gave a CQ DX call on 15, 20 and 10 m as he often did.

He also worked on Koolan Island off the north-west coast and operated a quite elaborate set-up from there.

Born in Newcastle, NSW, he came to Western Australia to practice his profession as a mining engineer after beginning his career as a boiler maker welder. Ron was respected by the many workers he had in his charge in the many places that he worked.

Ron served his country in Vietnam at a young age. He never missed an Anzac Day beer and very rarely a Remembrance Day Contest.

My best mate!

David M Laws VK6IV

Peter Frith VK7PF **Life Member, Tasmanian Division.**

On 25 July a great number of amateurs joined with his family and friends to pay tribute to, and give thanks for, the life of our respected life member, Peter Donald Frith who died on 23 July.

Peter had been at various times Divisional and Northern Branch President, Secretary, and Divisional Councillor.

Born in 1931, Peter was always interested in electronics. He passed his amateur operator's licence exam at the age of 14 but in those days could not operate until he turned 17.

He joined the Wireless Institute in 1949 and immediately took a very active part. He, with a couple of other amateurs was the first to span Bass Strait on two metres from a temporary station on Mt Direction, just pipping two north-west coasters by two days. They climbed Mt Barrow to have the first north-south VHF contact.

Peter was the driving force behind the establishment of what was only the second

VHF repeater in Australia on Mt Barrow, VK7RAA. After construction, it became his baby until fairly recently when severe ill-health stepped in.

He was also an ardent satellite enthusiast and was active with the early OSCAR satellites and later with AMSAT.

His marriage to Bette was one of those partnerships made in Heaven. Their family grew to two daughters and a son, Greg, who played a musical tribute to his Dad on the saxophone during the service.

Peter was for 42 years the airport radio technician at the Western Junction airport and such was his standing in that capacity that Qantas sent him twice to Zimbabwe to install the instrument landing system there.

They don't come much better than Peter Frith - we'll really miss you, mate.

To close, let me quote a tribute printed on the back of the service folder from his younger brother, Michael.

A quiet man who set by example the correct way to love and look after a lady

A man who never swore, who frowned upon the mildest form of swearing.

A caring man who always asked after our health rather than complain of his.

A generous man who always gave what he could and expected nothing in return.

A man we could always look up to, who never made us ashamed of him.

A man who believed his family was more important than anything else

A man who fought with courage and dignity to the end and who loved us all unconditionally.

A man we are proud to call Dad, husband, brother and friend.

Does not that sum up the life of our life member, Peter Frith?

Vale, Peter. We your amateur friends just give thanks for your having been amongst us.

Ron Churcher VK7RN
President,
WIA Tasmanian Division

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(Continued from page 20)

ing program. This program runs from DOS and could be useful if you are having mouse problems. You run the program and it allows you to move the pointer to various points on the screen to test the left and right buttons, etc. At the end of the test you click on 'Exit'. However, if the mouse does not work you cannot click on 'Exit' to exit the program! There are no keyboard commands to exit the program. All you can do is turn the computer off!

Computers, ugh!

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Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

Return Loss

A rather rash statement was made, "serves no useful purpose in radio technology", in *Technical Correspondence* in the July 1998 issue of *Amateur Radio* magazine.

"Return Loss" is another expression of reflected power from a termination and is still in common use.

(An example, supplied but not reproduced here, is from a test equipment catalogue, showing various figures of return loss across the bands covered by a professional RF wattmeter. Ed)

John Grace VK2ZCG
9 Fauna Place
Kirrawee NSW 2232

Return Loss Revisited

Whilst I agree with Mr Lawless that "return loss" finds little use in amateur radio terminology, (*Technical Correspondence*, *Amateur Radio*, July 98), I most heartily disagree with his assertion that "return loss" serves no useful purpose in radio technology.

Return loss, reflection coefficient and VSWR (voltage standing wave ratio), are all ways of expressing the degree of mismatch exhibited by a load being used at radio frequencies. It matters little if the point of measurement is adjacent to the power source looking towards a transmission line terminated in an antenna or dummy load or alternatively at the end of a transmission line looking towards an antenna.

Return loss is the most self explanatory term of the three. Return loss is simply the amount in dB by which the forward power exceeds the consequent reflected power at the point of measurement. Or, put another way, the attenuation from the point of measurement to the load and back for the reflected signal. For example, if, at the point of measurement, the forward power is 100 watts and the reflected power is one watt then the forward power is 100 times greater than the reflected power. This equates to 20 dB return loss. The figure is quoted as a positive value because it is expressing a loss. If return "gain" were used it would be more correct to state the figure as -20 dB.

The "reflection coefficient" is simply obtained by performing the following:

$$\sqrt{\text{Reflected Power/Forward Power}}$$

It may be quoted as a decimal fraction or a percentage and, in the example given above, is equal to 0.1 or 10%.

The VSWR is the ratio of maximum to minimum voltages which appear as a cyclic stationary pattern on a transmission line, not less than 1/4 wave length long, as a result of interaction between the forward wave and the reflected wave. It is numerically equal to $(1 + \text{Reflection coefficient}) / (1 - \text{Reflection coefficient})$. In the above example this equals $(1 + 0.1) / (1 - 0.1) = 1.22$.

VSWR is the usually accepted measurement when testing the quality of matching of impedances of source/feedline/antenna for narrow bandwidth transmissions, such as amateur HF and VHF, and commercial HF, VHF and UHF mobile systems.

Typical VSWR meters actually use a directional coupling to sample the magnitude of the currents related to the forward and reflected power transfer and display this on a meter which has been calibrated to read in VSWR.

With broad-band radio systems in the semi-microwave and microwave region, the system uses a far greater chunk of the spectrum than that resulting from SSB or phase modulation by a single voice channel. Typical frequency division multiplex modulation on a broad-band system will carry 1200 channels, each 4 kHz wide, or the system may carry a 6 MHz video signal and will thus require the antenna system to be adequately matched over a much wider range of frequencies. Digital systems usually use even greater bandwidth than the older analogue systems.

Many of these systems have RF power outputs of only around four watts so antenna characteristics are important. One antenna will handle both the transmit and receive frequency band with some separation between them.

With such systems return loss is a more suitable method of expressing the quality of the matching. A return loss bridge coupled with a sweep generator and CRT display allows the return loss to be displayed, with frequency markers, for the required bandwidth of the antenna system. Such a measuring system also facilitates the adjustment of the primary antenna position and any other necessary adjustments. It also allows for a photograph to be taken of the characteristics

of the feeder/antenna combination on initial installation. This is then used for future reference if it is suspected that deterioration has occurred.

Another interesting point to note is the better readability of return loss compared with VSWR at low values of reflected power, eg as the VSWR reduces from 1.22 to 1.10, the return loss increases from 20.0 dB to 26.4 dB.

W H Pickering VK4WP
10 Marina Parade
Ingham QLD 4850

How Low Can You Go

In the article "How Low Can You Go" on page 20 of the August 1998 issue of *Amateur Radio*, we have an excellent presentation of the radiation patterns of an 80 m dipole at various heights.

These computer simulations do not include ground losses, which would show the 1.8 m high pattern some 8 dB worse off than the 13 m one! While, as stated, the 1.8 m high antenna is a quite useful radiator, an increase in height to 1/20 wavelength (4 m) is a worthwhile improvement of 4 dB while not requiring excessive masts in a suburban backyard.

However, while discussing the DX uses around 1000 km distant, NO MENTION was made that the maximum radiation, toward 30 degrees from the vertical, can fill in the "skip distance" from 30 to 600 km for some 22 hours a day on 80 metres!

Ionospheric reflection in these temperate latitudes rarely fails, except for the two hours before dawn, while "absorption" has little effect on this band. Check this out with the HF Frequency Prediction Charts from the IPS Radio and Space Services.

This is the type of propagation supporting all those "local" nets around the country, every day, all year, during this low of the sunspot cycle when most DX is on 20 metres!

Reference: 'Low Radiators and High Ground Planes', *Amateur Radio*, November 1994.

William A McLeod VK3MI
42 Capon Street

WIA Call Book '99

The latest listings of over
16,000 Australian radio
amateur callsigns.

Bonus "Callsigns on Disk"
supplement available for
only \$10!

WIA Divisions News

Forward Bias — VK1 Notes

A somewhat more verbose column this month to make up for our absence last month, said absence being a result of an absent minded columnist, I'm afraid.

While we're talking about the column, does it meet your needs? Apart from the observation that it didn't appear for a couple of months from two people who indicated they missed it, there has been very little feedback.

I'm not chasing praise but, if you have any comments, suggestions or contributions are most certainly welcome!

The Silence is Deafening

Having last month availed myself of 70 cm capability, I'm astonished at how little usage our two excellent repeaters on this band receive. Surely we can do better than this?

The device on Black Mountain, VK1RBM on 438.525 MHz, gives exceptional coverage within the city, even with the modest 300 mW output of the IC-Q7A.

The linked repeater on Mt Ginini, VK1RGI on 438.375 MHz, is accessible with only slightly more power and/or a decent antenna, the linking providing a fantastic opportunity to converse with fellow operators far further afield than one might otherwise.

As some have observed, the recent availability of ex-commercial 2 m capable equipment is seeing more of these units consigned to the vehicle whilst the more sophisticated dual band hardware gets put in the shed, where I suspect it remains unused. Whilst this change may preclude use of 70 cm on the way to and from work, a length of RG-213 (or even RG-58 if you keep it short) and a coat hanger wire quarter wave will provide noise free performance into the local repeaters from most locations around town.

The old adage of "use it or lose it" is frighteningly real in respect to our 70 cm allocation. The great efforts of the ACA liaison team can only be bolstered if it's clear the band is in use!

Time to get out the radios, folks! Most people have at least a modest 70 cm set-up, now don't they? Besides, I want someone to talk to on a channel free of pagers!

1998 Technical Symposium

Thanks to the efforts of Mike VK1KCK, and the rest of the Technical/Packet radio group, the group will be presenting the 1998 VK1 Amateur Radio Symposium on Sunday, 22 November at the Mount Rogers Scout and Guide Halls in Chamwood.

Mike indicated that there are already sufficient speakers for one of the two streams planned for the event. More speakers are welcome and can contact Mike for more information on getting involved (*mikew@netspeed.com.au* or QTHR).

Interstate visitors are always welcome to present a session or attend the symposium itself (or both!) Plans are underway to provide some foxhunts on the Saturday afternoon and a dinner venue for the Saturday night. These events have been a tremendous success in the past and this year's is shaping up to go one better. Don't miss it!

Next Meeting

Our September meeting will be on Monday the 28th. The topic is to be determined but a quick listen to the broadcast or glance at the Web site will bring you up to speed. Look forward to having a 'cuppa' with you then.

Hugh Blemings VK1YYZ

VK2 Notes

Olympic Games Trial Frequencies

Since the last issue of *Amateur Radio*, this Division received a letter from the Sydney office of the Australian Communications Authority requesting our comments on the temporary allocation of two frequencies in the amateur segment of the 70 cm band. The frequencies had been requested by the Olympic Games organisers for trials during September of this year for the sailing events to be held on Sydney Harbour. The trials are to enable an assessment to be made as to the suitability of the equipment planned for use in the year 2000.

Contrary to what was reported by various 'enlightened sources', the ACA had not allocated, nor had they, at the time of writing these notes, agreed to any specific frequencies. Two frequencies had been suggested by the organisers and the ACA wrote to us asking for our comments as to their suitability. It must be pointed out that the equipment to be used for these events is designed for a range of European frequencies which fall into part of the Australian 70 cm band.

Many of you will recall that our President, Michael Corbin VK2YC, in one of his Sunday broadcasts advised listeners of the request and, in fact, asked for input from our

members for consideration before we formally replied to the ACA. Many members took the time to respond to Michael's request, for which the Council says a sincere 'thank you'.

Now I think we should get this completely into perspective. This was ONLY a request by the ACA for VK2 comments on a series of trials which would be localised to the immediate surrounds of Sydney Harbour for a short, temporary period in September this year. There was never any indication that this would be an on-going situation. In fact, it may be found that the frequencies in question are totally unsuitable.

A response to the ACA request has been sent giving our recommendations as to which pair of frequencies we consider to be most suitable. Our response also included a number of concerns raised by our members and a request that the Divisional Council be kept fully informed of developments.

The ACA has now assured this Division that we would be involved in future discussions on any aspect of the allocation of frequencies for the Games.

Council will keep members informed, so listen to the Sunday broadcasts for future updates.

Membership Drive

The prize of an ICOM 706 Mark II, kindly donated jointly by ICOM Australia and Amateur Transceiver Radio Centre of Girraween, NSW, is proving popular, with a steady stream of requests for membership applications being received by the office since the prize draw was announced in mid June. Incidentally, Les VK2MPZ, the owner of ATR Centre in Girraween, is a member of the VK2 Division, and a staunch WIA supporter. So, when you want that piece of new equipment, give Les a ring - you'll find his advertisement elsewhere in this magazine.

The prize will be drawn at the Annual General Meeting in April 1999; any new applications received before 26 March 1999 will go into the draw.

Dural Facelift

Our Broadcast Facility at Dural has been given a facelift! The exterior woodwork of the building has been fully prepared and repainted.

The out-buildings have also been painted and the smaller, most frequently used one, is now positively dazzling inside! So, if you've gotta go, wear your shades!

More up-dating and refurbishing is being planned for the future to greatly improve this marvellous facility. Some equipment has already been replaced and the next item is probably to paint the interior of the main building.

Membership Due?

Finally, a reminder to all VK2 Members. If your membership was due for renewal on 1 July, and you haven't yet paid your fees, please do so as a matter of urgency to ensure that you continue to receive *Amateur Radio* magazine.

Don't forget you do not have to send your renewal notice to the Federal Office in Melbourne. You can pay in Parramatta either by cash, cheque, money order or credit card - you can even phone or fax your renewal if paying by credit card.

If you are unsure when your renewal is due, call the office on 02 9689 2417 or, outside the Sydney metropolitan area, use our Freephone number 1800 817644. The office fax number is 02 9633 1525.

Eric Fossey VK2EFY
Division Secretary

WIA Victoria News

Future of Morse code

The issue of whether Morse code proficiency should remain a mandatory requirement in amateur radio licensing continues to be hotly debated throughout the world.

The Radio Society of Great Britain (RSGB) has a clear policy to seek its abolition through the World Radio Conference, and wants to lower the Morse code requirement for British licensing as soon as possible. Other European radio societies may voice their views in coming months.

Most recently the American Radio Relay League (ARRL) proposed a restructure of its licensing system which, among other things, would reduce the emphasis on Morse telegraphy proficiency.

Like the RSGB, the ARRL's stated motive for promoting change is to make the hobby more attractive to a wide range of potential radio amateurs.

In Australia, where debate about Morse code continues, thought is also being given to changing the licence structure. Advocates of such change want to simplify the licence structure in the belief that this would attract more newcomers. Another driving force is to lessen the administrative burden amateur radio places on the Australian Communications Authority.

The RSGB in a recent statement said that the original requirement for Morse code in amateur licensing seems to have stemmed from three sources:

- The fact that Morse code was a prime transmission mode half a century ago.
- The need for a "lingua franca" to allow commercial stations to ask amateur radio

stations to close down should they be causing interference.

- The fact that Morse code made communications possible across language barriers.

These three basic points are certain to be the core of the argument by those wanting an end to Morse code proficiency, while those seeking its retention are likely to argue that Morse code continue as a licence requirement because:

- The mode provides a ready means of communication in times of disaster.

- A total end to Morse code proficiency will take away a major difference between amateur radio and CB radio, and lead to a merging of the two hobbies.

- The fact that Morse code makes communications possible across language barriers.

The issue is not simple. It generates a lot of personal emotion. Any change in the Morse code requirement automatically means a restructure in the number of licences categories, and their operating privileges.

Those wanting a "status quo" retention of Morse code not only have to do battle with the *Morse code Abolitionists*, but now also the emerging *Licence Reformists*. A middle ground compromise is the retention of Morse code for full access to HF at a proficiency of five words per minute.

WIA Victoria will be guided by its members when the time comes to revise its policy on the Morse code issue. It has decided to survey the membership again on the issue in mid-1999.

Eyes on WIA Federal

A draft business plan for the ongoing operation of the WIA Federal Office and the WIA Federal Board of Directors is expected to be available for comment soon.

WIA Victoria is looking forward to seeing in writing the details of the plan which comes mid-way through the term of the current WIA Federal Board of Directors.

The WIA Victoria Council appreciates the difficulties faced in financing the WIA Federal operation which includes rising costs.

There is a need in the current economic climate to stabilise the membership fees. While it is desirable to preserve the WIA federation, this must not be at the cost of damaging the financial stability and strength of WIA Victoria.

We are mindful that any fee hike would adversely affect our substantial number of very loyal older members.

Car Locked Out

A total of 130 imported European cars recently landed at Elizabeth in South Australia were fitted with 70 cm radio key

locks. This caused headaches for technicians who were trying to ready them for the local market.

WIA Victoria was asked to exercise its influence to find a quick solution to get the cars moving to distributors who had waiting buyers. Our CEO Barry Wilton VK3XV politely reminded the car importer that the automotive industry had been warned about the problem, and apparently not taken the matter seriously enough.

The European radio security systems are incompatible with Australian radio frequency standards. The 70 cm regenerative receivers used in the vehicles have broad band front ends and we understand this is causing widespread problems.

Jim Linton VK3PC
Division President

VK5 and VK8 Notes

Divisional Council

Here are details of the positions for the Divisional Council for the current year. This information was provided at the July General Meeting of the Division. President, Ian Hunt VK5QX; Vice Presidents, David Burnett VK5AXW and Phil Pavey VK5VB; Secretary, position vacant; Assistant Secretary, Graham Wiseman VK5EU (Acting Secretary); Treasurer, Joe Burford VK5UJ; Federal Councillor, Jim McLachlan VK5NB; Alternate Federal Councillors, David Burnett VK5AXW and Ian Watson VK5KIA (co-opted); Minute Secretary, Don Christiansen VK5ADC; Membership Secretary, Tony van Lyndon VK5WC; Education Officer, Tony van Lyndon VK5WC; and Recruitment Officer, Michael Gell VK5ZLC.

The position of Clubs' Liaison Officer will continue to be filled by Jim VK5NB who will also remain as Chairman of the Constitution Review Committee.

As Ian VK5KIA had been on Council from the time of the Annual General Meeting by virtue of his office as Federal Councillor, it was necessary that he now be "co-opted" to allow him to remain on Council and thus provide continuity on the basis of his previous position.

Burley Griffin Building (BGB)

The general position as described in last month's issue of *Amateur Radio* regarding our occupancy of the Burley Griffin Building, located within the old Thebarton Council Depot, still prevails; however, there have been some interesting developments.

Based on a "tip off" from a member, I arranged an interview with Dr Reece Jennings who is Acting Mayor of the West Torrens

Council. He was most interested in the explanation of our present situation and asked for copies of various documents concerning the issue. Copies of briefing material which had been produced so as to provide background to the issue in hand, and to boost our case, were provided for each of the 16 members of the West Torrens Council.

Dr Jennings then directed that the matter be placed on the agenda for the coming meeting of the City Council and also requested that I address the Council regarding our occupancy. He also suggested that, as a show of support, we could have several members present as a deputation. This was arranged accordingly.

I provided a presentation of about 10 minutes duration to the Council during which I was able to cover the major aspects of our operation in the BGB Headquarters and the desirability of our being able to continue our occupancy. Amongst the aspects covered was an emphasis placed on the usage of the premises as a hub of the Adelaide Local Area Net within the Packet Radio system, the viability of the site as an emergency communications centre which houses VK5WI, and the convenience of a secure location with 24 hours per day access in a non-residential area.

This presentation appeared to be well received, with Dr Jennings having introduced the matter by suggesting to the Council that the WIA is a well respected body and that during the years we had shown ourselves as being most responsible in all our dealings with the Council. He suggested that we should be given very favourable consideration.

Another member of the Council, pointing out that he had been Mayor of the Thebarton Corporation, spoke in glowing terms regarding the WIA and also urged Councillors to strongly consider a decision in our favour. Some questions were asked and answered and indications were given by several other members of the Council that the presentation was well done.

Following this event an eight page booklet in A5 format has been produced. This explains many aspects of amateur radio, and also provides details as to the value of the hobby to the community. A copy of this document, together with an individual letter which provides further material to support our campaign, has now been sent to each member of the West Torrens City Council (copies of this booklet will also be useful as a general information document to be placed within schools and in other areas where information on amateur radio may be useful.)

At a City Council Meeting to be held on 18 August, a report compiled by employed officers of the Council dealing with the matter of the sale of the old Council depot, will be

presented. One would assume that the elected Council members would not make snap decisions based on the report or its contents, but rather that they would require a period of time to consider any options and ramifications of any proposals made. We thus expect that some time will elapse before a final decision is made known.

Meantime, we will continue to monitor progress and to lobby the Council members where possible. You will be advised further as information becomes available.

Subsequent to the West Torrens City Council Meeting, I was approached by a newspaper reporter who was interested in the story. This resulted in the publication in the *Weekly Times Messenger*, the local area newspaper, of a front and third page photograph and three separate articles dealing with the Burley Griffin Building from a historical point of view, the fight by the WIA VK5 Division to stay put, and a description of amateur radio contacts with Andy Thomas on the Space Station MIR.

Coming Meetings

The General Meetings of the Division occur on the fourth Tuesday of each month.

At the September meeting we will receive a presentation from a member of the Telstra National Communications Team. This team comprises personnel from the Telstra organisation who are available to speak on a wide range of subjects, ranging from the 'History of Telecommunications' to 'Telephone Re-Numbering' and 'Disability Services'. At the September General Meeting the subject will be 'Telecommunications Into the 21st Century'.

I extend my best wishes to you in your activities and also on behalf of the Divisional Council.

Ian Hunt VK5QX
Division President

VK6 Notes

Well, the Avon Descent has come and been, now for the RD Contest this weekend! Hope we had fun with great propagation for the event.

Two Metres FM

What do you think about the FM Field Day contest to be held on Sunday, 20 September at 12.30 pm local, which was so thoroughly detailed by Chris VK6KCH in the August *VK6 Notes*? Will you get involved?

I know that, if at all possible, I certainly will because:

(a) I want to do whatever I can to support our great hobby, raise the general level of

activity on 2 m FM (albeit briefly, this is only a four hour event), encourage my fellow amateurs to "come out of their shells" and gain the confidence to use their VHF gear to its full potential (ie this is a simplex event, so you are not broadcasting!); and

(b) I just want to have some serious fun. What a great excuse to drive up the hill and get stuck in the gully.

It will be interesting to see what sort of response and activity this event draws.

Mobile in Perth

I had been told that Perth locals would only answer your call on 2 m repeaters if they knew you, and that the usual thing was for the same people to talk to each other in small "exclusive" groups.

On a recent six week work assignment, during which I commuted from Toodyay to Perth every day, I found quite the opposite situation. My calls were nearly always answered, by many different people, and the "groups" were, in fact, very "inclusive" if you wished to participate.

I guess the important thing is to dispense with any shyness or "mike fright", put out several calls, identify the repeater you are on (most FMers are scanning many frequencies), and certainly don't even think about what you are going to say. Just do it!

What's Happening on 80 m?

I suppose TV, satellite TV, Internet, work and family pressures generated by the pace of life in the 1990's are what's happening. But it's a very worrying trend.

VK6 Council Minutes

August 1998. Just a brief synopsis of points of interest (*the italics are mine*).

A publicity poster for placement at radio retailers is being arranged (*great work - now how about taking out a full page ad in the national newspaper, and a TV ad in the middle of the news break?!*).

Difficulties are being experienced in arranging exams. To encourage the supply of invigilators, the VK6 Division will pay the \$10 invigilators application fee (*why does anybody have to pay anything in the first place?*).

The Secretary advised that the Divisional bookshop is now housed at the premises of Tower Communications in Hazelmere, telephone 08 9274 1118.

There was considerable discussion about the possibilities of the Institute acquiring a small parcel of land in an elevated position which could provide a good VHF/UHF location for a variety of applications.

The VHF Group proposal for extensions to the Novice access to the narrow band portions of VHF bands is probably deferred

Meeting Activities

All our three branches are striving to keep the interest of members over the winter months with special visits, practical nights, etc. Both the North and North-west Branches had practical meetings in August, the North making G5RV wire antennas together with theory discussion and the North-west branch combining antenna construction with a barbecue at the home of the Secretary, John Klop VK7KCC.

USS Stennis Visit

All the hopes of the Southern branch for a visit to the aircraft carrier were dashed when, because of 'greeny' protests over nuclear power, and the danger of mayhem if any got aboard, all public visits were banned. We're still hoping for visits in the future.

Repeaters

Winter has really played havoc with the Northern Branch repeaters on Mt Barrow and Mt Arthur. Joe VK7JG and Tim VK7TIM have spent countless hours (plus much cost) ploughing through two feet of mountaintop snow to keep the repeaters on the air. To quote the classics, "their blood's worth bottling"!

The new UHF repeater sited at the Domain Centre in Hobart is doing a fine job.

"Saxon Safari" Car Rally

The Hobart WICEN group did an outstanding job of communications organisation for this rally with congratulatory comments from the organisers and participants. Looks like they could have a much greater involvement in next years rally. Congratulations to the 15 amateurs involved.

Publicity

Following a series of interviews, etc on the national station 7ZR earlier in the year, we are getting requests to provide speakers for meetings. The latest is from the CWA for their Hobart meeting. The members in Hobart felt that the one person to do this admirably was Bill VK7WR whose ability to 'wow' the ladies caused him to be elected as the 'volunteer'. We've got absolute confidence in you, Bill.

Ron Churcher VK7RN
Division President ar

(Continued from page 26)

Just received into our collection is the QSL YK0A which gives prefix hunters yet another new one. This was a DXpedition courtesy of the Northern Californian DX Foundation and Omar YK1AO. Let us hope that there will be more activity from this rare spot in the future.

What's New?

New products of interest to radio amateurs

For those amateurs who are interested in audio or HDTV, Belden Australia have announced the introduction of a new series of cables for use in these instances.

There are two 75-ohm cables, one of which, the 1855A SDI Precision Video Coax, is 30% smaller in diameter and lighter in weight than standard RG-59/U cables, and so is ideal for mobile use or where space and weight restrictions apply. It is capable of transmitting SMPTE signals up to 61 metres with maximum clarity and reliability.

If longer distances are required, then the 7731A (RG-11/U) type cables should be used.

Both cables are available in a range of colours, thus facilitating interconnection where signals may be coming from a number of different sources.

Also available is their Belden 1883A line level Analogue Audio Cable, a single twisted pair cable designed for permanent or semi-permanent multi-channel professional audio installations. It features 100% shielding and, like the coax cable above, is available in a range of colours.

Their third product, Belden's Audioflex Single Pair cable, is highly flexible, intended for use as a patch cable and as a high performance studio or stage cable. It features double spiral bare copper shields tied together into one weave, and is claimed to provide a 50% reduction in triboelectric and microphonic noise over standard cables.

These cables should be available from our regular advertisers. ar

Thanks

The Federal body of the WIA would like to express its thanks to the following for their kind donation of QSL cards to the National Collection: Bill VK6XA, Brian VK4LV, Geoff VK2OI, Lindsay VK5GZ, and Hans SWL L40370. Also to the relatives and friends of the following 'SK' for their kind donation: Lindsay Stephens VK2ACO, courtesy of Duncan VK2DLR. ar

for at least three years following the Federal resolution that only unrestricted licence privilege extensions would be dealt with for a three year period (*this is extremely disappointing - how do these anti-growth resolutions come about?*).

The proposal that it be WIA policy to seek primary frequency segments in bands above 144 MHz is to be followed up by the Federal Councillor.

Concern was expressed that there had been no meeting between the Federal Liaison Committee and the ACA for at least 12 months.

Keith VK6XH reported that there had been only low interest in the Whiteman Park project.

(The reference above to meetings of the Federal Liaison Committee made by the VK6 Council are not correct. There have been many contacts by members of the Committee with the ACA, in person, by telephone and by correspondence. Many issues relating to the Amateur Radio Service have been progressed during the past months but there remains much work to be done in this vital area. The support of all Divisions is important if the voice of the WIA is to be fully effective. Peter Naish VK2BPN, Chairman of Federal Liaison Committee, member of Federal Executive.)

WARG

August meeting notes. VK6ZLZ reported that there are currently 114 financial members (*good effort*).

There has been a reply from Worksafe regarding volunteers climbing WARG masts on farm or private land. The Secretary is to write to the owners of the RBN site enclosing a copy, and pointing out that, although commercial climbers on the tower would require to be licensed by Worksafe, the letter excluded amateur volunteers from these regulations (*no excuse now not to be the first to volunteer to strap on the climbing belt!*).

It was reported that there appeared to be a problem with the 70 cm repeater RTH at Tic Hill. The Ident level is down and the two metre repeater is 3 kHz high.

It was decided that the Tait conversion project should be completed before the group attempted to link RAV Avon Valley back to Perth. However, a UHF antenna should be mounted on the tower to check if a signal from RUF was available to the site (*I am keen to help with the RAV project and will wear the belt if no one else will!*).

Chris Lowe VK6BIK

WIA Call Book 99
Order your copy now!

Club News

VK1 Amateur Radio Symposium

The Canberra Amateur Packet Radio Group (CAPRG), in conjunction with the VK1 WIA, is planning to hold the next VK1 Amateur Radio Symposium on Sunday, 22 November 1998 at the Charnwood Scout Hall.

If there is enough interest a fox hunt will be arranged for the Saturday afternoon and a dinner for the Saturday night.

Any amateur interested in making a presentation or attending the Symposium is invited to get in contact with Mike Walkington VK1KCK by e-mail to mikew@netspeed.com.au by packet to VK1KCK@VK1BBS or by mail to 17 Ogden CI, Fadden ACT 2904. Further details will be advised in the coming months.

Mike Walkington VK1KCK

Radio Amateur's Old Timers Club

The September luncheon of the Radio Old Timers Club (RAOTC) will be held at the extensively refurbished Benteigh Club on Tuesday, 8 September at 1 pm. The Club is located in Yawla Street, Benteigh.

The guest speaker will be Mr John Richards, a senior QANTAS engineer responsible for the planning of the company's facilities at airports around the world.

Visitors from other clubs are welcome subject to firm bookings with Arthur Evans VK3VQ not later than Wednesday, 3 September. Arthur's address is 237 Bluff Road, Sandringham 3191, and his phone number is 9598 4262.

RAOTC membership is open to amateurs who have held, or have been qualified to hold, an amateur licence for 25 years or longer. Age is definitely not a qualification!

Allan Doble VK3AMD

Melbourne Packet Radio Group Inc

In recent times there have been a couple of events which have changed the face of packet radio in Melbourne.

The first was the closing down of the VK3RUM wormhole which provided most of the connectivity for keyboard to keyboard

contacts with the world and international mail and bulletins. This was brought about by legislation which came into effect on 1 January this year. At present we have no other facility available to replace this service as the alternatives require ongoing funding to pay for a permanent Internet connection. With the low level of support received from the users of the network, we would be foolish to commit ourselves to additional expense (all membership applications and/or donations gratefully accepted!).

The second event was brought about by the first. The gear that was removed from VK3RUM has been relocated to provide a full duplex link between VK3RPS at Mt Holden and VK3RPA/VK3BBS at St Albans to replace the previous half duplex link which was becoming clogged with traffic. The improvement has been excellent. If you are using TPK type programs to collect headers from VK3BBS your new route will be VK3RPS-2, VK3RPS-10, VK3RPA-10 on 147.600 MHz 1200 baud or VK3RPS-7, VK3RPS-10, VK3RPA-10 on 434.050 MHz 9600 baud.

The next meeting of the Group will be at 1930 hours on Monday, 14 September at the Moorabbin and District Radio Club rooms, Turner Road, Highett in Victoria (Melways 77 J9). All are welcome. Enquiries should be addressed to MPRGi, PO Box 299, St Albans, VIC 3021, or via packet to MPRGCM@VK3BBS.#MEL.VIC.AUS.OC Peter McEwen VK3FEE

Gippsland Gate Radio and Electronics Club

GGREC members would like to thank all who made their Hamfest such a success on Saturday, 18 July. Numbers exceeded our expectation and we thank all sellers and buyers for their support and patience in rather crowded conditions. Plans are already underway to increase the available space for next year and we look forward to your support again in 1999.

GGREC meets in the Guide Hall, Grant Street, Cranbourne (Melways ref 133 J6) on the third Friday of each month at 8.30 pm. We also have an informal meeting on the first Friday at 8.30 pm when projects can be worked on, information shared, or just coffee and a chat.

We have a varied program of meetings, talks, and activities for the whole family (camping, 4-wheel driving, bowling, skating, meals, etc). Club members are also active in

Call Book '99

On sale next month!

Stolen Equipment

The following equipment has been reported stolen. If you have any information that may lead to the recovery of the equipment, please get in touch with the advised contact as soon as practicable.

Make: Kenwood
Model: TS-850
Serial Number: Unknown
Type: HF transceiver
Accessories: Microphone
Modifications: Nil
Stolen from: Home QTH
Date: 31 July 1998
Other items taken: Jewellery, travellers cheques, cash
Reported to: Box Hill Police
Owner: Tuck C Choy
Callsign: VK3CCA
Contact details: tuck@sci.monash.edu.au

ar

Slow scan TV, Amateur TV, and on VHF and HF (both SSB and CW).

We also hope to be able to run a course in amateur radio starting early next year. Also, we will be participating in JOTA as VK3GGC.

New members and visitors are always welcome at any of our Club meetings. In the meantime, why not visit our Internet site at <http://avoca.vicnet.net.au/~ggrec>.

Pat Pavey VK3OZ
Secretary

Radio Amateur's Old Timers Club of South Australia

The Annual Luncheon will be held on Thursday, 22 October 1998 at the Airport Club, James Schofield Drive, Adelaide Airport (opposite the International Airport) at 11.30 am for a 12 noon start.

RSVP before 18 October to: President, Jack Townsend VK5HT on 8295 2209; Secretary, Ray Deane VK5RK on 8271 5401; or Assistant Secretary, Lew Schaumlöffal VK5AKQ on 8263 0882.

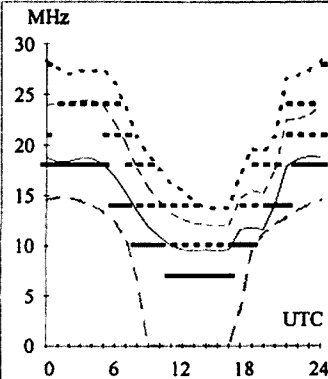
Those using public transport should take the TA bus 278 to stop 9.

Ray Deane VK5RK
Secretary

ar

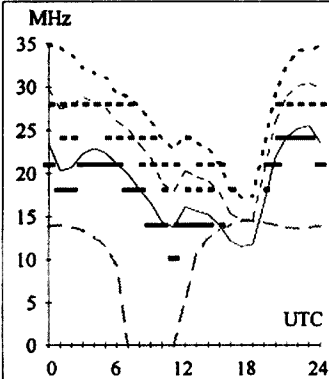
Adelaide-Anchorage 30

First F 0-5 Short 12466 km



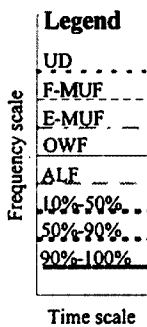
Brisbane-Lima 122

First F 0-5 Short 13056 km



September 1998

T index: 90



HF Predictions

Evan Jarman VK3ANI

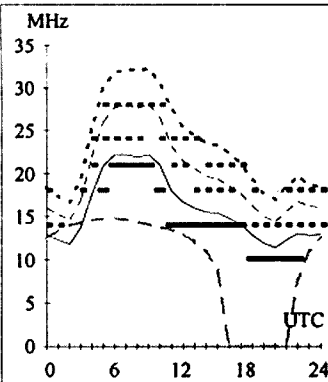
34 Alandale Court, Blackburn VIC 3130

These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. The frequencies, identified in the legend, are:-

- Upper Decile (F-layer)
 - F-layer Maximum Useable Frequency
 - E-layer Maximum Useable Frequency
 - Optimum Working Frequency (F-layer)
 - Absorption Limiting Frequency
- Also shown hourly are the highest frequency amateur bands in ranges between these key frequencies; when useable. The predictions were made with the Ionospheric Prediction Service program ASAPS version 4. The path, propagation mode and Australian terminal bearing are also given for each circuit.

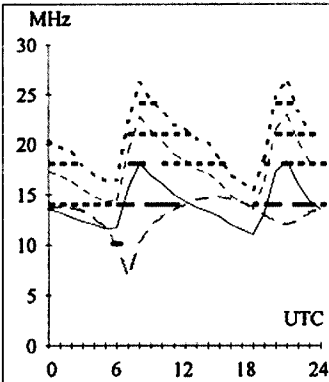
Adelaide-Budapest 305

First F 0-5 Short 14908 km



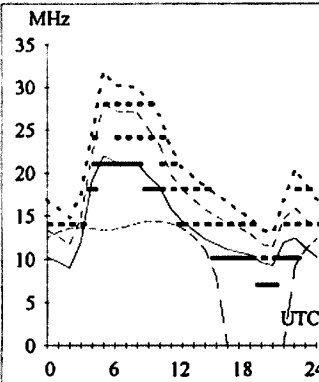
Brisbane-London 147

First F 0-5 Long 23498 km



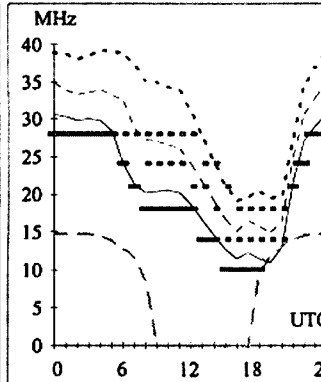
Canberra-Lusaka 239

Second 4F3-5 4E0 Short 11620 km



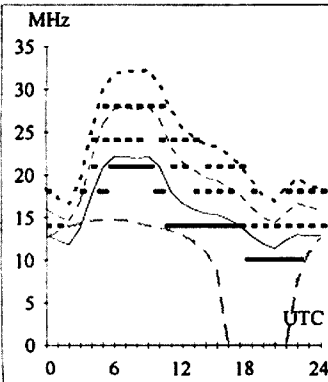
Darwin-Honolulu 65

First 3F3-8 3E0 Short 8636 km



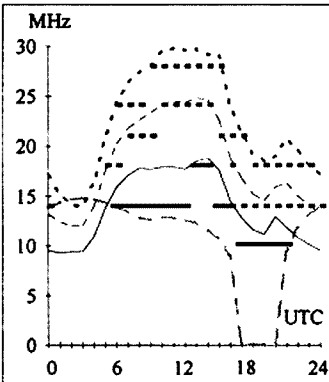
Adelaide-Suva 75

First 2F8-11 2E0 Short 4339 km



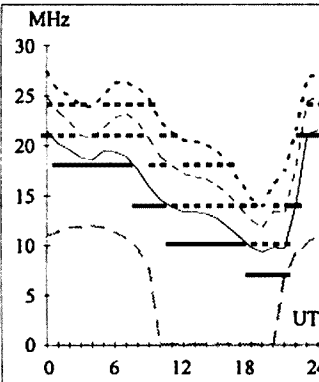
Brisbane-London 327

First F 0-5 Short 16526 km



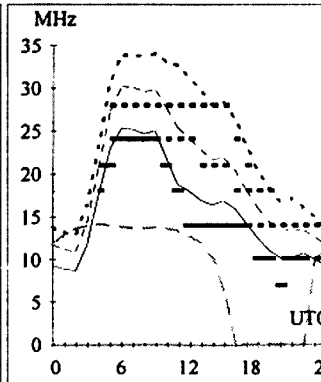
Canberra-Manila 327

Second 3F8-15 3E0 Short 6286 km



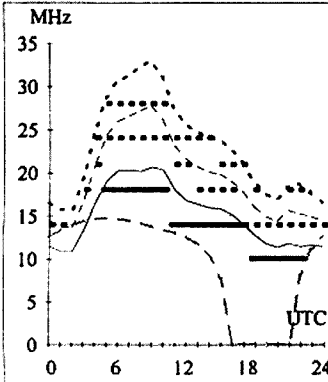
Darwin-Johannesburg 241

Second 4F4-7 4E0 Short 10639 km



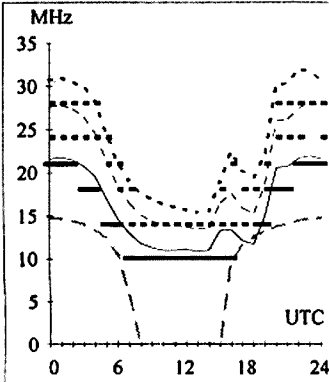
Adelaide-Warsaw 312

First F 0-5 Short 14819 km



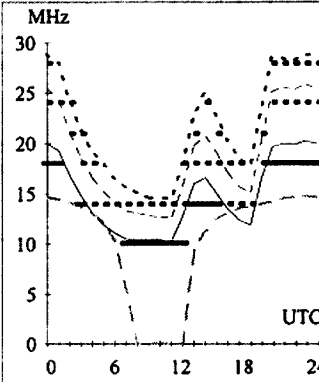
Brisbane-Seattle 44

Second 4F2-6 4E0 Short 11845 km



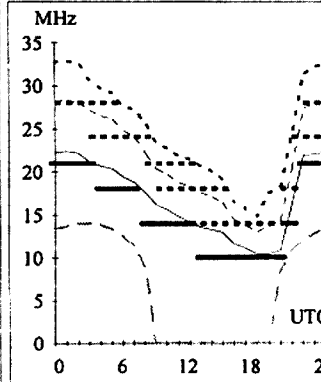
Canberra-Ottawa 59

First F 0-5 Short 16100 km



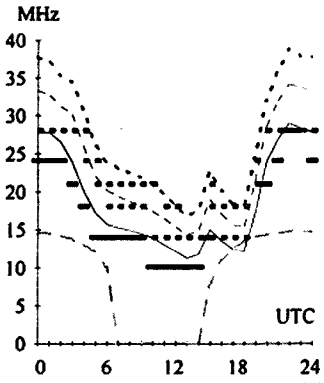
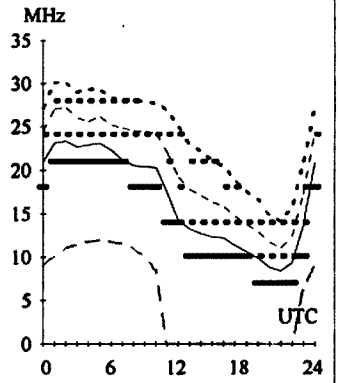
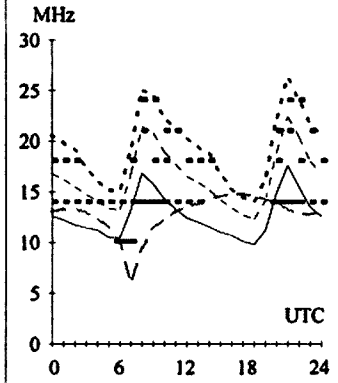
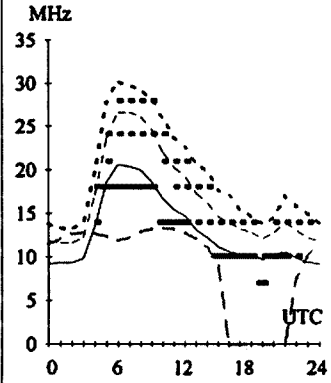
Darwin-Wellington 135

First 2F4-7 2E0 Short 5321 km



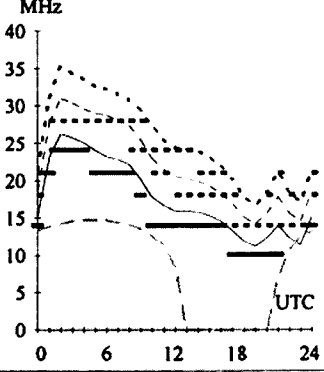
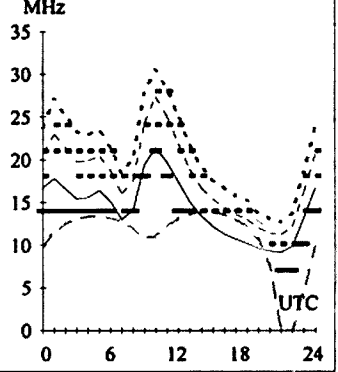
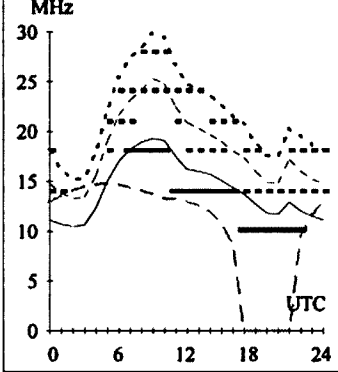
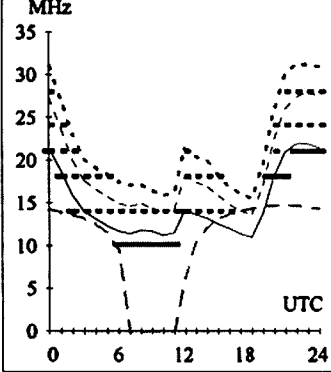
Hobart-Capetown 220 **Melbourne-London** 131 **Perth-Kuala Lumpur** 336 **Sydney-Los Angeles** 61

First 3F1-3 3E0 Short 10025 km First F 0-5 Long 23118 km First 2F8-14 2E0 Short 4179 km First F 0-5 Short 12075 km



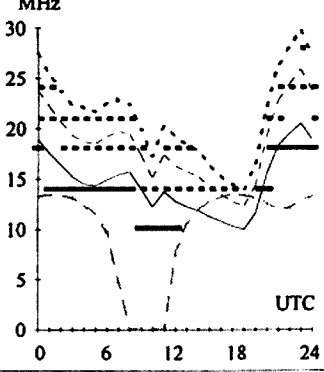
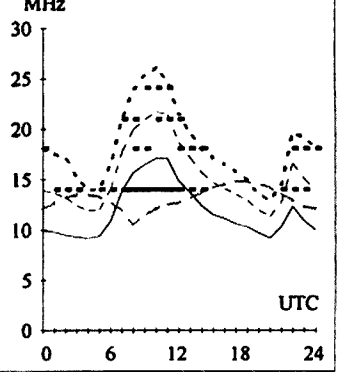
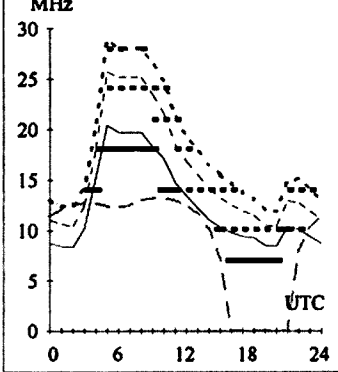
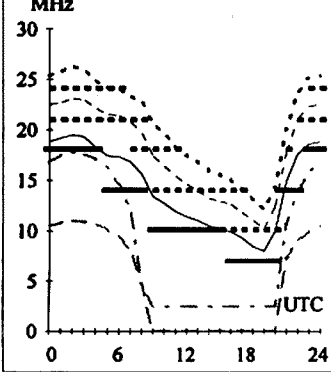
Hobart-New York 80 **Melbourne-London** 311 **Perth-Rio de Janeiro** 203 **Sydney-Rawalpindi** 304

First F 0-5 Short 16610 km First F 0-5 Short 16906 km First F 0-5 Short 13523 km Second 4F4-9 4E0 Short 11066 km



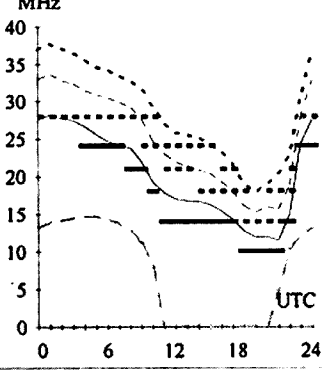
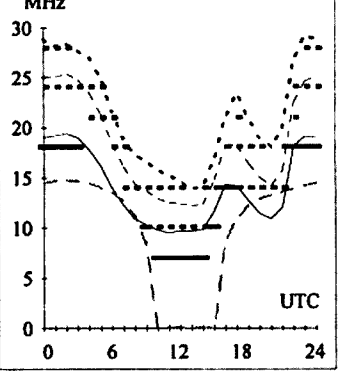
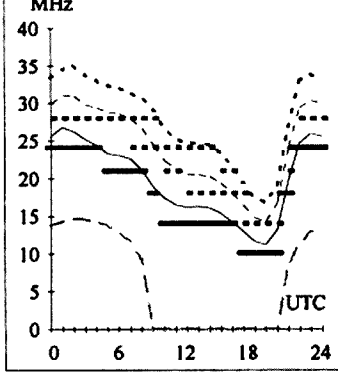
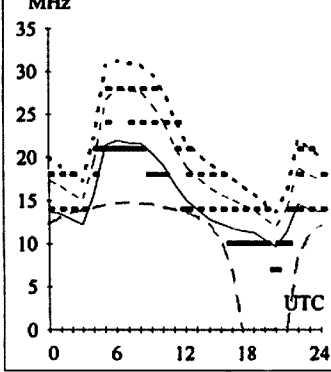
Hobart-Port Moresby 0 **Melbourne-Pretoria** 234 **Perth-Stockholm** 144 **Sydney-Santiago** 145

Second 2F11-14 2E1 Short 3711 km Second 4F5-8 4E0 Short 10352 km First F 0-5 Long 26578 km Second 4F3-5 4E0 Short 11347 km



Hobart-Rome 284 **Melbourne-Tokyo** 356 **Perth-Vancouver** 50 **Sydney-Singapore** 298

First F 0-5 Short 16350 km First 3F4-8 3E0 Short 8192 km First F 0-5 Short 14824 km First 2F1-5 2E0 Short 6295 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194
Fax: 03 9584 8928
E-mail: vk3br@c031.aone.net.au

TRADE ADS

● **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.

● **WEATHER FAX programs for IBM XT/ATs** *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.

● **HAM LOG v3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone". The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02

369 2008 BH, fax 02 369 3069. Internet address rhg@ozemail.com.au.

FOR SALE ACT

● Tower, triangular lattice, four section, erects 8/15/22/29 m guyed, bottom has rungs and 40 cm baseplate, suit 150 mm tube, \$850 neg, collect. Peter VK1KEP, 026266 4671.

● Surplus to requirements: Signal Generator TS-418, 400 to 1000 MHz, 2 microvolt to 200 millivolt, 50 ohms, 110 V AC. Also HP606A, 50 kHz to 65 MHz, 0.1 microvolt to 3 volt, 50 ohms. Any offers? Peter VK1CPK, 026231 1790, pkloppen@dynamite.com.au.

FOR SALE NSW

● Deceased estate - Neil Stewart VK2GS: Yaesu FT-200 txcvr, \$200. EA (Altronics K2517) 1 GHz frequency counter, \$100. EA (DSE K3436) 200 MHz frequency counter, \$50. EA (Jaycar KA1742) audio oscillator, \$50. Silicon Chip (Altronics K2524) 4 digit capacitance meter, \$50. AVO MK II valve tester, \$200. All are complete, working, with (mic), leads and manuals. 2 section, 13 m triangular mast, \$50. Bob VK2CAN, QTHR, 02 9416 3727.

● HF receiver, 1.6 to 30 MHz, Alden weather fax, has U/LSB, \$250. Ted VK2EZQ, 019 640 437.

● Apple II clone, extra RAM, 2 disks, 80 column card, with "Fairy" IC test interface card which identifies and tests 54/7400 and 54/74LS series TTL chips. \$100 the lot. Warwick VK2ZMS, QTHR, 02 9579 6656.

● Weller 50V soldering iron, brand new, boxed, \$25. Radio Theory Handbook by Swainston, 1st edition, fair condn, \$20. Internet starter kit by Microplay, brand new, never used, for Win-

dows 3.11, \$40 ONO. Small mobile ATU, good condn, \$25. WIA amateur log book, brand new, three for sale, \$5 each or 3 for \$10. Steve VK2SPS, QTHR, 02 4334 7743.

● Kenwood TS-520 txcvr, mic, manual, \$400. Oscarblock SWR-200 ATU with SWR Meter, \$90. Kenwood DG5 digital display, \$100. Kenwood TS-120S txcvr, \$400. Kenwood PS-30 heavy duty PSU, \$180. Akigawa PM-5H ATU with SWR Meter, \$30. Kenwood 7625 2 m txcvr, \$150. Icom IC-290H 2 m txcvr, \$200. Yaesu FT-411E 2 m hand held, \$150. Yaesu FT-757GX HF txcvr, \$500. Yaesu FT-757 heavy duty PSU, \$175. Yaesu FC-700 ATU, \$125. Yaesu FRG7 communications receiver, \$150. AEA PK232 multi-mode TNC, \$200. Computer (8088), twin 360 k floppies with program for PK232 (free with PK232). Epson LX 400 (DM) printer, \$50. Compaq Pentium 75 computer, 15 inch monitor, \$1250. Dynalink 28 kbyte modem, \$50. Kenwood PS-20 light duty PSU, \$100. Micronta PSU 12 V 5 A, \$35. Revex SWR/Power Meter, 144-500 MHz, \$75. Data Switch, serial with data LEDs, \$60. Trio dynamic mic, \$50. Fugiden 1 kW low pass filter, \$70. Palomar noise bridge, \$25. Oskarblock multimeter, \$20. Megger 250 V, \$75. Ribbon mic, \$80. EAT 300 ATU and SWR meter, \$100. Tokyo HC500 high power ATU, \$80. Dwell tachometer, \$20. AWA Voltohmyst Type A56010. Leader LSG11 signal generator, \$75. Mode 110 SWR/Power meter, \$30. Simplex Morse key, \$30. Tech TE15 GDO, \$75. Realistic speaker for TRX, \$10. MPJ SWR wattmeter, \$80. Frank VK2ADU, 02 4237 7443.

● Yaesu FT-767GX CAT, HF, 6 m, 2 m, 70 cm, all mode, in-built power supply, in-built ATU, digital SWR meter, digital power meter, all mode squelch, good condition, \$1500. Frank VK2XVJ, QTHR, 02 4933 3760 (4-8 pm).

● HP Vectra PCs, 1 x 486, 7 x 386, 1 x 286, various configurations, some with VGA monitor, price range of \$190 to \$30. John VK2WW, 02 9546 1927.

● Yaesu FT-736R VHF/UHF all mode txcvr, 6 m/2 m/70 cm, full satellite and duplex operation, excellent condn, \$1600. Yaesu FT-26R 2 m handheld txcvr, spkr/mic, charger, dry cell pack, VGC, \$220. Yaesu FT-101E HF txcvr, 160 - 10 m, mic, DC leads, VGC, \$350. Chris VK2YMW, QTHR, 02 9487 2764.

● Kantronics Communicator 3 packet TNC, as new condn, all documentation plus Manhattan data transfer switch and cables to enable selection of either of two TNCs/modems, etc, \$150. Sid VK2SW, QTHR, 02 6922 6082.

● Yaesu FT-1000MP HF DSP txcvr, \$3200. Yaesu FT-2400 2 m txcvr, \$350. Yaesu FT-212RH 2 m txcvr, \$250. PK 232 MBX, \$250. Multi tri-bander beam, very compact, \$200. Emtron EAT-300A ATU, \$200. Icom SM5 desk mike, \$60. Kenwood TM-241A 2 m txcvr, \$280. Bruce VK2WWW, 02 6331 1188.

FOR SALE VIC

- Towers. Two section wind-up, 50 ft, guyed mast, \$150. Three piece wind-up, guyed, 45 ft mast, suitable for wire antennas, etc, \$100. Les VK3MF, QTHR, 03 5422 2860.
- 13.8 V, VK PowerMaster 35 A PSU, \$300. Goldstar OS-9040D Dual Beam CRO, \$700. MFJ 259 HF/VHF SWR analyser, \$250. MFJ 219 UHF SWR analyser, \$150. Ramsey FM 2 m txcvr base rig, \$150. Elenco RF signal generator, 110 kHz to 150 MHz with digital readout, \$450. Tuck VK3CCA, Tuck@sci.monash.edu.au
- Yaesu FT-101ZD Mk II HF txcvr, WARC bands, s/n ON230712, with FV-101DM external VFO, FM board, MH-1B8 mic with VFO scanning, operating and full service manuals, EC, \$650. Icom IC-W2A 2 m 70 cm handheld, mint condn, s/n 12371, with cable, pouch, UT-63 tone squelch, 5 W, 62 memories, \$400. Bob VK3BRF, QTHR, 03 9878 6613.
- Yaesu FT-470 dual-band 2 m/70 cm handheld, desk top charger, spare battery pack, head set with boom mic, speaker/mic, spare high gain dual band whip, car adapter, leather case, \$450. Kenwood TS-680S all mode multi-band HF/VHF txcvr, with Emtron cross needle 30 A PSU, \$1450. Martin VK3JAZ, QTHR, 03 9789 9196.
- AEA Pakratt 232MBX multimode data controller with manuals, brand new, never been used, \$200. Ian VK3SH, QTHR, 03 9876 4990, ianrj@bigpond.com.au
- Icom R72 receiver, 250 kHz to 29.9 MHz, all mode, \$850. MFJ 941 Versa Tuner, cross needle SWR, as new, \$150. Yaesu FT-757 txcvr, EC, as new, \$900. TenTec Scout 555 txcvr with band plug-ins, \$600. Cushcraft 13 el, long boom, 2 m beam, EC, \$150. Cushcraft 20 el, long boom, 70 cm Yagi, \$125. TenTec Omni-VI txcvr, latest model, 24 poles of filtering, pass band tuning, DSP audio filtering, top performer, original list price \$5200, accept \$2200. Home brew 10 el 2 m beam, \$25. 20 m quarter wave vertical (ground mounting) with radials, EC, \$45. 25 lengths new 10 mm OD aluminium heavy wall tubing 1200 mm long, excellent for beam construction, \$30 the lot. Harold VK3AFQ (on behalf of vendor), 03 9596 2414 anytime.
- Icom IC2SAT 2 m HT, s/n 6186, extended Rx, c/w BC84 HD battery pack and BC72 desk-top charger, manuals, all as new, \$300. Brian VK3KQB, QTHR, 03 5453 1300.
- Kenwood TS-940SAT deluxe HF txcvr, EC, \$1600. MFJ-784B DSP filter, cost \$500, sell \$200. JPS DSP filter, EC \$150. ARRL Handbooks, 1957/61/67/70/77/78/85/88, \$10 each. Icom PS-15 20 A PSU, \$150. Leader LSG 10 signal generator, EC, \$25. Ron VK3OM, QTHR, 03 5944 3019.
- Kenwood TS520S, ext VFO 520S, MC50 mic, near new, 6146B finals, excellent working order, \$525 ONO. Brainer 2 m base vertical antenna, VGC, \$150. Rita VK3NRT, QTHR, 03 9798 3248.
- Free *Electronics Australia/Radio and Hobbies*, most years complete, about 250 copies, four boxes in one lot, pick up from Endeavour Hills. Stan VK3AYF, QTHR, 03 9700 4903.
- Icom IC-736 HF/6 m 100 W txcvr, excellent condn with manuals and original packing boxes, \$2200 ONO. Ian VK3AQU, 03 5751 1631 (AH), 0418 579 422 (AH), or lorian@albury.net.au.

FOR SALE OLD

- Coaxial relay, SPDT (changeover) contacts, precision "N" connectors, new, unused, \$50. Plate

blocking capacitor, 3300 pF 20 kW, silver plated 8 mm screw connections supplied, new, unused, \$25. John VK4KK, QTHR, 07 3269 6647

- UHF transmitter, 100 W, two 4CX250 tubes each with tuneable resonator/cavity, decent blower, directional coupler for FWD and RFL power metering, rack mount, ex DCA, 240 V AC, circuits, suit 70 cm, \$100. Power supply with HT transformer 1400 V CT, HV diode rectifier stack, suit linear amplifier, \$30. Gary VK4AR, 07 3353 1695.

- Kenwood TS-140S/680S service manual, \$15. Kenwood YK-455-C1 CW filter, \$50. Ray VK4BLK, 07 4939 2284.

FOR SALE SA

- Kenwood TS 811-B, all mode 70 cm 25 W base txcvr, MGF1302 pre-amp, s/n 5100306, \$800 ONO. Kenwood TR-9000, all mode 2 m 10 W mobile txcvr, s/n 1023123, \$375 ONO. David VK5KK, 08 8281 8172, tecknolt@arcom.com.au

FOR SALE WA

- Cushcraft R5 vertical antenna, 14 - 30 MHz incl WARC bands, \$225 plus freight. Alec VK6BEB, QTHR, 08 9841 7773.

- Yaesu FT-902DM HF txcvr, S/N OM 160409, 100 W, HF including WARC bands. Digital display, in-built AC power supply or DC operation, complete with operating and workshop manuals and two sets of spare tubes, ex deceased estate VK6CN, \$600 ONO. Don VK6HK, QTHR, 08 9446 2864.

WANTED NSW

- Radio Handbook Wm Orr 16th Edition (1964 or thereabouts). Ten-Tec 544 txcvr. Paddle Key. Ray VK2FW, QTHR, 02 6365 3410.

- VHF converter for Kenwood R2000 receiver. Michael VK2HZM, 02 4759 1421, 0414 591 421, md@pnc.com.au.

- Pactor modem, or information on upgrading PK232MBX 1991 firmware for pactor. Ted VK2EQ, 019 460 437.

- AWA A410 signal generator test set either high or low band, any condn. W B Weiley VK2AZW, QTHR, 02 4984 2419.

- JRC NRD-505, 515, or 525 receiver. Bruce VK2WWW, 02 6331 1188.

WANTED VIC

- 3N201 double gate FET transistor. Willem VK3BTQ, QTHR, 03 9750 5701.

- Meter for AVO model CT160 valve tester. Ian VK3SH, QTHR, 03 9876 4990, ianrj@bigpond.com.au

- Old valve radios, complete, or anything with salvageable parts, cabinets, valves, etc. Graeme VK3JGL, QTHR, 03 5443 8999, vk3jgl@ruralnet.net.au.

- Outboard CW filter, MFJ CWF2BX or similar, circa 1978-80, to narrow CW on FT-7, pay fair price, re-imburse phone or postage costs, details to Ken VK3BXN, QTHR, 03 9528 6527.

WANTED OLD

- Eimac 3-500Z tube or pair of same, good price for good tube(s). John VK4KK, QTHR, 07 32696647.

- 2SC2694 RF power transistors, as used in DSE 144 MHz linear. Dow Key coax relays. Ray VK4BLK, 07 4939 2284.

WANTED SA

- Yaesu FC-102 ATU and FAS-1 remote antenna switch. Gary VK5DX, 0419 815 479.

- Kenwood SW-100 mobile SWR/power meter (or similar). Front panel separation kit for Yaesu FT-747 HF mobile rig, as recently cleared by DSE. Kevin VK5KJ, 08 8725 9248 (AH).

- Tektronix ISI sampling unit, suits the 500 series of CRO. C S Ratcliff VK5ZST, 08 8520 2988.

WANTED TAS

- Yaesu FT-901 mains power transformer. Yaesu FV-101Z ext VFO. Frank VK7BC, QTHR, 03 6330 1379.

- Mode switch to suit Yaesu FRG-7. Has anyone got a new one in their junkbox. Please. Wayne L70137, 03 6343 5700.

WANTED NT

- Icom IC-3210A txcvr owner handbook, photocopy acceptable, will pay costs. Phil VK8NPL, PO Box 37315, Winnellie NT 0821, 08 8981 1591, pjlong@octa4.net.au.

MISCELLANEOUS

- The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

- If you got your licence before 1973 you are invited to join the Radio Amateurs Old Timers Club. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book. ar

WIA MORSE PRACTICE TRANSMISSIONS

VK2BWI
VK2RCW

Nightly at 2000 local on 3550 kHz
Continuous on 3699 kHz and 144.950 MHz
5 wpm, 8 wpm, 12 wpm

VK3COD

Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz

VK3RCW

Continuous on 145.650 MHz, 5 wpm, 10 wpm

VK4WIT

Monday at 0930 UTC on 3535 kHz

VK4AV

Thursday at 0930 UTC on 3535 kHz

VK4WIS

Sunday at 0930 UTC on 3535 kHz

VK5AWI

Nightly at 2030 local on 3550 kHz

VK5VF

Continuous on 145.650 MHz, 5 wpm to 12 wpm

VK6RCW

Continuous on 147.375 MHz, 3 wpm to 12 wpm

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	Weekly News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 800 Canberra ACT 2601		President Hugh Blemings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD 3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on internet aus.radio.amateur.misc.newsgroup , and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525		President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KUR From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
	Web: http://marconi.mpce.mq.edu.au/wia e-mail address: vk2wi@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz			
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298		President Jim Linton Secretary Barry Wilton Treasurer Rob Halley (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au Web: http://www.tbsa.com.au/~wiavic/	VK3PC VK3XV VK3NC VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.815 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714		President Colin Gladstone Secretary Peter Harding Treasurer Ailistair Elrick e-mail address: wiaq@brisbane.dialix.com.au Web: http://www.wiaq.powerup.com.au	VK4ACG VK4JPH VK4FTL 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8284 0483		President Ian Hunt Assistant Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.875 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873		President Wally Howse Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6KZ VK6ZLZ VK6OO 146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.350(R) Busseton and 146.900(R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday, relayed on 1.865, 3.583 and 438.525 MHz; country relays on 146.350 and 146.900 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738		President Ron Churcher Secretary Paul Godden Treasurer John Klop Web: http://www.wia.tasnet.net	VK7RN VK7KPG VK7KCC 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.825 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				
Note: All times are local. All frequencies MHz.			Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times.

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The FT-847 is ready for satellite operation, with crossband full duplex operation, normal and inverted VFO tracking of the satellite uplink/downlink, as well as 12 special satellite memories with alpha-numeric tags. Also provided is a low-noise Direct Digital Synthesiser (DDS) that provides tuning steps as small as 0.1Hz, plus there's an adjustable DSP bandpass filter as narrow as 25Hz for exceptional weak-signal CW performance. You can also install optional Collins® mechanical filters in both the transmit and receive chain for enhanced SSB operation, as well as a 500Hz Collins® filter in the receiver side for CW. An RF-style speech processor with adjustable frequency shift voice tailoring is also provided to add punch to your SSB transmissions.

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Each transceiver is supplied with a hand-mic, DC power lead and a comprehensive instruction manual. Call us for a copy of Yaesu's 6 page colour brochure to learn more about this incredible value "Earth Station" transceiver.

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October 1998

Volume 66 No 10

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- Icom IC-706MkII with DSP, reviewed by Ron VK3OM
- An LF Antenna Bridge, designed by Lloyd VK5BR
- The 41st Jamboree-on-the-Air (JOTA)

Plus *lots of other articles, news and special interest columns*

QMS - 7

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If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with your local Post Office before contacting the registered office of the WIA.

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Cover Will you be participating in the inaugural VHF/UHF Spring Contest? If so, your portable station may look like that of Max Pickering VK3TMP operating portable from the cliff-top at Kilcunda on 30 December 1997.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from vk3br Communications Pty Ltd on receipt of a stamped, self addressed envelope.

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The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

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Viewpoint

WIA Comment

Unreasonable Personal Attacks

I was talking on the telephone recently with another amateur who is also working for the WIA. We were discussing the need to get more people involved with helping to run the various committees and groups that do the work in the organisation. We were talking specifically about finding people with certain skills.

We discussed why we had both decided to come forward and then he made a comment that set me back on my heels. He said that he fully expected after a few years in his job to leave the position and be hated by a significant portion of the amateur population.

He wasn't expecting to do a terrible job. On the contrary, I'm sure he will do a good job for his fellow amateurs. No, what he meant was that in the time he serves with the WIA he will be subject to a degree of character assassination and unreasonable criticism which will be believed by some.

What an appalling thought!

What sort of organisation are the members allowing to develop where a good person with obvious personal skills and integrity can be forced to suffer such attacks in order to serve the organisation?

The members at large must ensure this stops.

There should, of course, be very vigorous debate on issues affecting amateur radio. We are in a position right now where there are significant threats to our existence and doubts, even within the hobby, of its value and potential futures. However, debate should be about the issues not the personalities. Just because I support one side of the Morse case does not turn me into the devil incarnate suitable for personal vilification.

I am reminded of one of the most famous quotes about democracy, "It is necessary only for the good man to do nothing for evil to triumph" (attributed to Edmund Burke but not found in his writings).

If someone is trying to advance their own position by denigrating their opponents or misrepresenting them, we should ask them to instead advance an alternative argument.

If someone purports to have inside information we should check it with an insider.

We should regard with suspicion those who try to build their own position only by denigrating others.

The easiest test of all is, does this argument, criticism or comment serve to improve the future of Amateur Radio for ALL amateurs? I emphasise ALL. In the world of Amateur Radio there is no room for parochialism. Amateur Radio is first governed by international treaties and then by national government laws. Those who keep their sights too low will miss the target and lose the whole game.

Of the 4500 members of the WIA the people that play the man rather than the ball amount to less than 50! However, many have reached positions of influence and power well above any positive contribution they have made to the organisation.

I plead with the members to ensure that there is vigorous debate on issues but in such a way that our best and most able people are encouraged to step forward and help Amateur Radio progress into the future. Without the help of many good people our organisation will die.

Martin Luther VK5GN

(Martin has been a licensed Radio Amateur for over thirty years and has held the calls GW3VBX, VK4VU and VK5GN. Active on all bands 160 to 70 cm and most modes, his special love is HF contesting. Martin is a Director of the WIA.)

ar

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

From the President Peter Naish VK2BPN

We are nearing the centenary of amateur radio. Much has changed since the early days of the hobby in terms of the technology we use and the society in which we live. We now make use of technical inventions many of which were pioneered by amateurs. It is relatively easy for us to set up an amateur radio station that is capable of talking to any point in the world directly or by satellite. Communications by voice, digital modes and television are commonplace. Computers and semiconductor devices have revolutionised our rigs.

But, have we as radio amateurs really changed? Have we not become so complacent after all these years that we think we need do nothing to ensure that amateur radio will continue to exist and

that we will be allowed to use our privileges for ever?

Slowly but surely society is changing. More and more influence is being placed on the use of resources and care of the environment. We have seen the pressures placed on commercial operators such as mobile telephone service companies in regard to their cell-site towers. The effects of radiation and visual impact are a major concern and this concern is beginning to flow onto the humble radio amateur with his back yard antenna farm.

Equally worrying to the amateur operator is the interest being placed on the radio spectrum which we use. Commercial organisations, with their massive budgets and thirst for new territory in which to promote their high

technology communications products, are looking at parts of the spectrum which a few years ago were relatively unused.

All of our UHF and microwave bands are allocated to us on a secondary basis and we have no security of tenure. Spectrum auctions to commercial interests have already begun and these will continue with the possibility of significant reduction in our privileges.

We as radio amateurs have to be responsible citizens. That means we cannot ignore the pressures and expect to continue without change. The WIA as the voice of the Australian radio amateur is active in ensuring that the best possible outcome will be achieved. This will not be any easy task. The dedicated group of volunteers who act as directors, councillors, co-ordinators and specialist delegates need the total support of all those interested in amateur radio.

As President, I intend to keep you up to date via this magazine as to how we are progressing and to request from you from time to time your particular assistance to ensure an acceptable solution. We have to work as a team and put aside personal issues.

Together, we will succeed and take amateur radio into our second century and the new millennium.

Peter Naish VK2BPN
WIA Federal President

ar

Its Now On Line! Just Type In www.wia.org.au

If you're like most people, you find typing long URLs (Uniform Resource Locators) tiresome at the best of times.

It's so easy to make a mistake, especially if the URL is a long one, as many are.

Telling others about a new URL can be troublesome too, especially if you forget how to say "~" or whether "/" is a "forward-" or "back-slash". Then, if the pages are relocated for any reason, you have to go through the whole ordeal again.

For those browsing the WIA pages, help is now at hand, with the registration of the domain name, <http://www.wia.org.au>. Simply type that into your browser (you can usually omit the <http://> / bit), and you get straight to the main WIA home page.

The new WIA home page has links to all the other WIA Division pages. You can even type www.wia.org.au/vk* (where "*" is your state number) to jump to the desired Division page. The WIA home page, which is being reorganised

at the time of writing, has a number of useful pages of information about operating in Australia, such as repeater and beacon lists, band plans, contest rules and results, some content from *Amateur Radio* magazine, and more.

There is also a new site index, which contains an alphabetical listing of the contents of the Federal pages (plus some links straight into the Division pages.)

We hope you'll find the new WIA pages easier to find, and easier to use! If you have any suggestions for improving the pages, please e-mail your suggestions to the acting Federal Webmaster, Richard Murnane VK2SKY at richardm@zeta.org.au who set up the new structure with the invaluable assistance of Mark VK2XGK.

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LL Brown, Apr 2002

ARRL Suggests Restructure of Ham Radio

The latest news from the ARRL centres on a proposal to restructure amateur radio in the United States to bring it into line with the requirements of the 21st Century.

Whether these requirements are perceived or proven, in an open letter from ARRL President Rod Stafford W6ROD it has been revealed that there is a growth rate of new hams coming into the service of less than 2 per cent. A rate that does not even keep up with the 'loss rate' of people who die or simply leave amateur radio for various reasons.

The letter also states that, "The Board of Directors is aware that merely restructuring licence classes and modernising the CW testing requirements is not the whole answer".

Mr Stafford also said that we have to change people's perception of ham radio

being a pursuit involving 70 year old communication techniques.

Debate has already been widely heard on the subject of the proposed restructure, which was discussed and voted on by the Board of the League. Lengthy discussion and debate during the Board's meeting earlier this year led to majority support for the plan.

The 'simplified Amateur Radio licensing structure' would accommodate four classes.

Under the new scheme there would be four written examination elements to establish amateurs' operational and technical qualifications, instead of the present five and two Morse code examination elements instead of the present three.

ar

A DXCC Location May Not Be an Island Unto Itself

I am grateful to Graham Kemp VK4BB who supplies me with QNews. A recent issue of QNews revealed how, for DXCC purposes, islands in a group can be identified.

John Aarsse VK4QA takes up the story.

"You may remember some weeks ago I mentioned that the new DXCC rules incorporated entities and I tried to explain what they were, a hard job as the original articles, both in the US and Dutch press were fairly vague.

"Well, peace at last. In the July issue of QST there is an interesting overview by DX editor K5FUV.

"For instance, an island group can have a number of separate entities, provided that all those islands are separated from each other by at least 350 km of sea and an island is defined as an entity which must have a connected land mass between two points which must be at least 100 metres apart.

"The question now arises, can Tasmania be considered an entity? It certainly is longer than 100 metres between any two points, but is it more than 350 km from the Australian mainland?"

If not, then we have to wait a few more centuries before mainland Australia has moved northwards at a rate of 6 cm per year".

ar

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Anti-CW groups on the Move

The proposed new structure from the ARRL does not suggest there is a move to eliminate Morse. In fact, the ARRL President, Rod Stafford W6ROD, says Morse code will stay.

But, as reported by the RSGB, a New Zealand based anti-CW lobby group has joined forces with a similar organisation in the United States, with the goal of ending mandatory Morse testing worldwide.

The New Zealand group, known as ORACLE, which stands for the Organisation Requesting Alternatives by Code-Less Examinations has teamed up with the US based No-Code International. ar

Back-off on 70 centimetres in the US

An official of the American Automobile Association (AAA), says the Land Mobile Communications Council (LMCC), is backing away from its request that the FCC reallocate 420 to 430 MHz and 440 to 450 MHz from the federal government to the Private Mobile Radio Service (PMRS).

An AAA spokesperson says he doubts

Recall of *Radio Theory Handbook for Amateur Operators, 3rd Edition*, by Fred Swainston

The electronic interface between the computer and the printer has caused some of the Greek symbols used in the publication to appear incorrectly.

DocuTrade, Tullamarine (the printer) and Silverdale Publications (the publisher) have arranged for all books to be corrected on their return to **Silverdale Publications, 73 Silverdale Road, Eaglemont VIC 3084** or, in NSW, all books returned to **Silverdale Publications via the WIA Office, 109 Wigram Street, Parramatta NSW 2124**.

We apologise for any inconvenience that may have occurred as a result of this misprinting.

We express our thanks to Max and Wilma Morris VK3GMM and Mrs E Harding VK5ZLU for their early identification and reporting of the incorrect symbols.

NOTE: It will be necessary to include your name and mailing address inside the front cover of your book to ensure the speedy return of your book.

Lorraine Hunter, Silverdale Publications, 03 9499 8111, silverdale100@hotmail.com ar

the FCC will ever agree to the request in the face of strong support for continued Amateur Radio presence on the band. Amateur Radio has a secondary allocation on the band. The AAA is an LMCC member.

It has been reported that strong support for ham radio from the Assoc-

iation of Public Safety Communications Officials-International (APCO) and the National Telecommunications and Information Administration caused the LMCC to back-off its demand to re-allocate the 70 cm sub-bands it had requested.

[Via Amateur Radio Newslines] ar

TIME TO DEFEND YOUR BANDS AND HARD-WON PRIVILEGES

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■ Test Equipment

An LF Antenna Bridge

Lloyd Butler VK5BR
18 Ottawa Avenue
Panorama SA 5041

Foreword

Most of us in VK5 will be well aware that the Coastal Radio Station VIA at McLaren Vale was made redundant a few years ago and purchased by Harro Krause VK5HK as his home QTH. It is a magnificent elevated site for amateur radio, well away from the built up areas and with a large aerial field of masts and transmission lines, the envy of all red-blooded radio amateurs.

As part of the installation, Harro has a beautiful vertical mast 45.72 metres high, insulated at the base and surrounded by 120 earth mat radials each 225 metres long. The original installation also had 90 metre top loading wires to four other surrounding towers. These wires have been removed but, with a bit of work, could be restored. To add to it all, there is a 75 ohm coaxial line and a 600 ohm open wire line already installed back to the radio building.

With or without the top loading, we have the ideal site for some LF transmission experiments and, if we can give him the necessary help, Harro is keen to make the site available for that purpose. Right from the earlier months of 1997, we have been looking at avenues to get an LF licence and how we might set up gear to transmit LF from the site. Initial thoughts were to use the mast as it stands (no top loading, at least for the present).

So that we could correctly couple and load the antenna at its base, we needed to know the values of the resistive and reactive component it presented. Some constants can be calculated but, in the real world, it's nice to be able to measure precisely what one has to work with.

Neither Harro nor myself had gear which could measure the constants required. Some 'farmyard' methods of

measurement were tried but results were not too convincing. Also, in making measurements on an antenna at this site, there is a problem of confusing readings caused by RF pick-up from high powered MF broadcast transmitters at nearby Pimpala. The problem of inadequate test gear led me to build the LF bridge which is the subject of this article.

Introduction

The bridge is based on the usual HF noise bridge circuit, which is actually a type of capacitance bridge arranged to measure both positive capacitive reactance and the reverse of this which is interpreted as inductive reactance.

However, it is different from the usual noise bridge in that the bridge components are selected specifically for the LF frequency range and the in-built signal source is a single frequency and not noise.

The single frequency is much more satisfactory to get a bridge balance. As a matter of fact, I often use a fixed frequency with my HF noise bridge for the same reason (*Reference 2*).

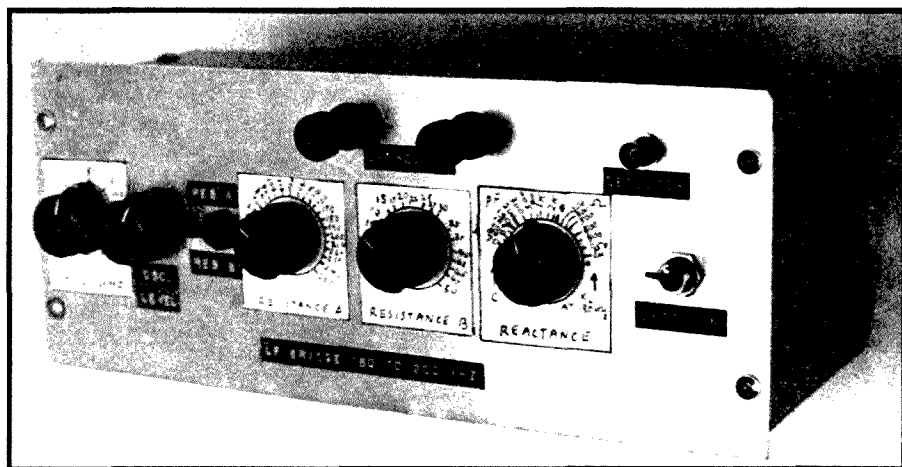
The unit was designed to operate within the range of 160 to 200 kHz, which covers frequencies used by several amateurs operating with Scientific Licences in Australia and the 160 to 190 kHz band allocated to New Zealand amateur stations. At the time of building the unit it was not known that the WIA might make application for an amateur band extending below 160 kHz to include the 135.7 to 137.8 kHz range now available to European amateurs under the CEPT agreement and later to be made available to UK amateurs.

An LF receiver is used as the null detector in conjunction with the LF bridge as is normally done at HF with the HF noise bridge. However, the output to the receiver is fed via a 160 to 200 kHz bandpass filter to protect against cross modulation at the receiver input from the broadcast stations mentioned previously and from VLF noise.

The unit can be used to measure the antenna resistance and reactance constants to assist in the design of the coupling system. It can also be used on the transmitter side of the coupling system so that the system can be checked and adjusted, as necessary, for the desired reflected load. This is done without putting any signal to air from the transmitter and, of course, this is how most people make use of the noise bridge at HF.

Circuit Description

The LF signal is generated by a 555 timer circuit N1 which is adjustable over the frequency range of 160 to 200 kHz. It is inclined to drift a bit when first turned on but it does the job. Its waveform is shaped



Front panel view of the LF Antenna Bridge.

by components L1 and C4, and drive level is set by RV1.

The bridge coupling transformer is fed via balanced driver LF353, N2. The bridge components are the 560 pF capacitor C9 in series with the unknown, 3 x 20 to 460 pF variable gang capacitor C10 with sections paralleled, and either of the potentiometers RV2 (250 ohms), or RV3 (50 ohms).

As with a lot of my projects, the unit was made from gear accumulated in my own junk box but I had some trouble finding suitable potentiometers with low enough inductance for use in RV1 and RV2. Carbon pots are really called for but, in low resistance values, they are a bit hard to find. I didn't have any and I couldn't find any in the catalogues of the local electronics shops.

At these low frequencies a small amount of inductance can be tolerated and several wire-wound pots were checked out for inductance. Most of those measured did not make the grade but I found two which just did the job. The 250 ohm Colvern pot selected measured 7 μ H at 250 ohms and 1.4 μ H at 50 ohms. This corresponds to a reactance at 200

kHz of 7 ohms and 1.5 ohms respectively. The 50 ohm A G Naunton pot selected had an inductive reactance lower than I could resolve at 200 kHz.

The reason for using the two pots switchable via SW2 was to get a better resolution at values below 50 ohms. Resolution of the larger wire-wound pot at low values is somewhat limited by the spacing between the wire turns and its residual minimum resistance value.

The bandpass filter is made up of a 160 kHz fifth order Chebychev high-pass filter combined with a 200 kHz fifth order Chebychev low-pass filter. They are designed for a circuit impedance of 50 ohms and are terminated in R11, assuming high impedance receiver input.

The unit is powered from a 12 V bank of size AA cells mounted in an eight cell battery holder.

Components

There is one thing about working at these low frequencies. We can select integrated circuit packages which just wouldn't work at HF. Typically, the 555 timer and the LF353 amplifier have been selected.

Potentiometers RV1 and RV4 are

carbon types. I would have preferred that RV2 and RV3 also be carbon types but, as discussed previously, low value carbon pots were a bit hard to find.

Inductors L1 to L6 are "off the shelf" miniature RF chokes normally available from electronics stores such as Dick Smith Electronics.

Transformer T1 was made up with 20 trifilar turns wound on a 16 mm ferrite toroidal core recovered from some old gear. The core measured an A_L factor of 1125 mH/1000 T. From this, we deduce that the primary inductance is 450 μ H giving a primary reactance of 453 ohms at 160 kHz and adequate for the application (as a rule of thumb, the primary reactance should be at least three times the circuit impedance at the lowest operating frequency).

Of course a maker's type number cannot be quoted for the core but, if anyone is interested, Amidon types FT50A-72, FT50B-43 and FT82-72 have suitable ferrite and A_L factors close to that given above.

The three gang 20 to 460 pF variable capacitor C10 is an old receiver type often picked up at amateur 'buy and sell' marts.

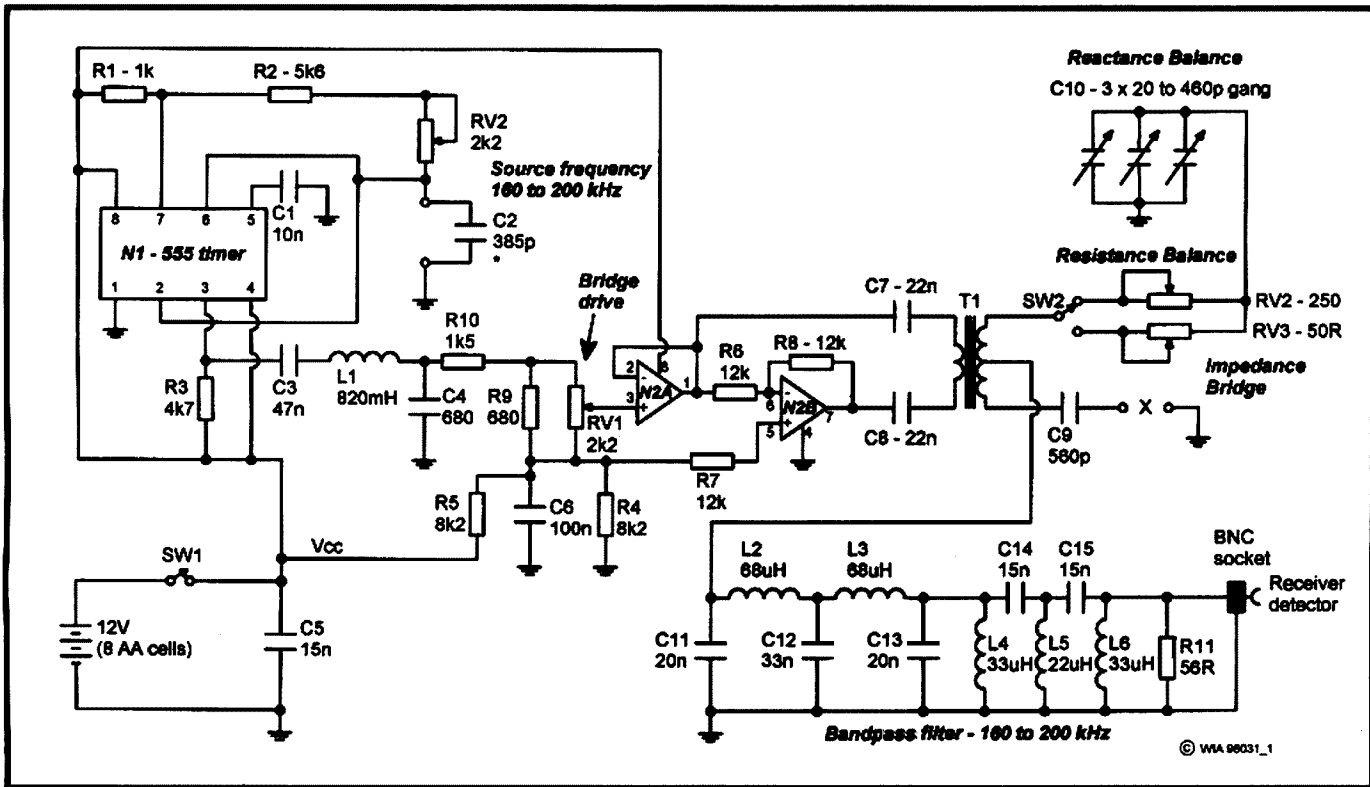
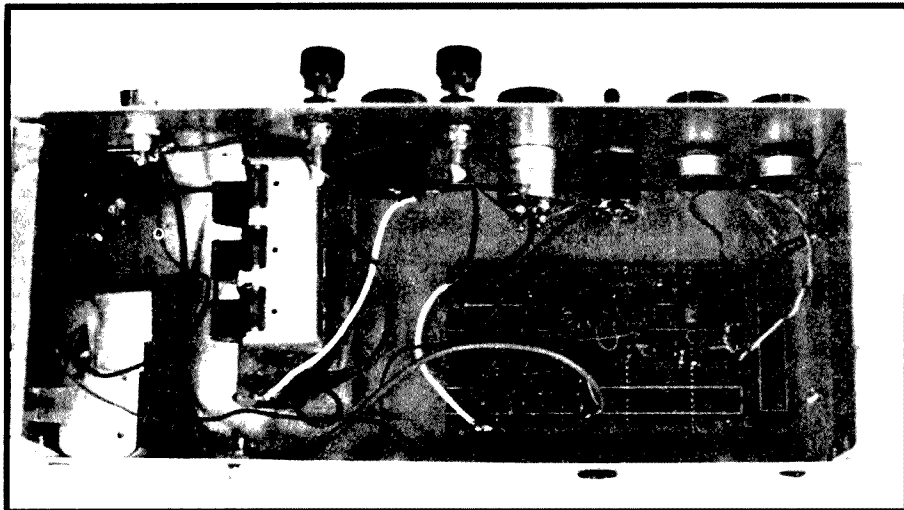


Fig 1 - Schematic diagram for the LF 160 to 200 kHz bridge.
 N2 - LF353
 T1 - 20 tri-filar turns on a 16 mm ferrite core with an A_L

factor of 1125 mH/1000 T.
 C2 - Adjust value for frequency range.
 L1-L6 Miniature RF chokes (off shelf).



Internal view from the top of the LF Antenna Bridge. The battery pack is at the lower left of the photo, with the three gang reactance balance capacitor to the right of it.

Most of the other components are non critical. Good silver mica capacitors are used for oscillator timing (C2) and in the bridge (C9).

The aluminium case was re-cycled from some other old gear which had been dismantled.

Calibration and Measurement Range

To be of use, the resistance dials coupled to RV2 and RV3, and the capacitance dial coupled to C10, had to be calibrated against known values of resistance and capacitance.

RV2 is calibrated in a range of 20 to 250 ohms. RV3 is calibrated in a range of 0 to 50 ohms. Positive capacitance of C10 is calibrated in a range of 70 to 3000 pF.

Reverse capacitance is calibrated in terms of inductive reactance at 180 kHz over a range of 0 to 1000 ohms.

Using this type of bridge (as used in the normal HF noise bridge), derivation of capacitive or inductive reactance at a given frequency from the scale as read can be a bit tricky.

For capacitive reactance, simply use the normal reactance formula, $1/2\pi fC$ where C is the capacitance read and f is the frequency.

For inductive reactance, divide the inductive reactance read by the ratio $f/180$ kHz.

As with the noise bridge, there is a calibration where reactance is virtual zero; that is when the capacitance side approaches infinity and the inductive reactance side approaches zero.

As this virtual centre is approached, resolution of precise values becomes cramped; the highest capacitance calibration is marked at 3000 pF and the lowest inductive reactance calibration is marked at 100 ohms.

Summary

I have described an instrument which can be used to measure reactance and resistance components in the LF range of 160 to 200 kHz. Whilst it is not a precision instrument, it can be carefully calibrated to provide useful readings of the antenna constants and be used to assist in adjusting matching to the antenna.

Specification summary:

- *Frequency Range - 160 to 200 kHz
- *Bridge Resistance Range Calibration - 20 to 250 ohms and 0 to 50 ohms
- *Bridge Capacitance Range Calibration - 70 to 3000 pF
- *Bridge Inductive Reactance Range Calibration - 100 to 1000 ohms at 180 kHz
- *Power Source - 12 V battery (8 AA cells).

At the time of writing, the February 1998 issue of *Amateur Radio* had just been released. In that issue, a press release by the Federal Media Liaison Officer announced the intention by the WIA to revive a submission for an LF band allocation (*Reference 3*).


As the press release indicated an intention to include application for frequencies below 160 kHz, I must now consider the possibility of extending operation of the instrument down to lower frequencies.

The bridge would work OK at the lower frequencies but the oscillator frequency range would have to be expanded downwards and the cut-off frequency of the high-pass filter section would have to be lowered.

As the main function of the complete filter is to remove MF broadcast station interference, it is also probable that it might be satisfactory just to disconnect the 160 kHz high-pass section leaving only the 200 kHz low-pass section in circuit.

References

1. Bob Slutzkin VK3SK.- Series of articles on the noise bridge - *Amateur Radio*, March, April, May 1981.
2. Lloyd Butler VK5BR - Another Tip for Using the Noise Bridge - *Amateur Radio*, December 1994.
3. WIA News, WIA Revives Submission for LF Band Allocation, *Amateur Radio*, February 1998. ar



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■ Equipment Review

Icom IC-706MkII HF + 50 MHz + 144 MHz All Mode Transceiver

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It's almost three years since I reviewed the original IC-706 (November 1995 issue of *Amateur Radio* magazine). Just over a year ago ICOM introduced the IC-706MkII with claimed better performance in several areas.

Well, is the Mark II version really better than the original IC-706 or not? Read on and all will be revealed. We have subjected both models to close laboratory testing and the outcome is very interesting indeed. Also, there is a very interesting option available for the Mark II version that has not been widely publicised for some strange reason. In fact, perhaps we should call the current version the IC-706MkII and a half.

What Is It?

First, though, a quick description of the IC-706 just in case you haven't got the original review and you don't know anything about the transceiver.

The IC-706 is a miniature 100 watt HF and 6 metre transceiver with 10 watts output on two metres. At the time of its introduction it created quite a sensation. After all, to include all of that in a package just 167 mm wide, 58 mm high and 200 mm deep was quite an achievement.

Of course, its main claim to fame was the detachable remote front panel which allowed the main body of the transceiver to be located under a seat, or in the boot of the car, with the front panel easily mounted near the driver's seat. In terms of what it can do, compared with its overall size, it hasn't been surpassed to this day.

Early Problems

However, there were a few slight

problems with the original version that really should not have happened in the first place. Top of the list was the very poor transmit quality on SSB. Second, but perhaps not as important, was the rather variable receiver sensitivity in the VHF general coverage range. While the amateur band sensitivity was very satisfactory, reception above 148 MHz dropped off to almost zero up to the limit of 200 MHz. Also, many operators considered the two metre output of ten watts was just a bit too low.

Let's cover the above problems one by one and see just what Icom have achieved with the Mark II version.

Transmit Audio Quality

The transmit quality problem was a strange one. It seems that the problems

we encountered in our original review were confined to some early models of the first production run. Later serial numbers had improved quality. To check this, I borrowed a Mark I model and tested it. It was better than our review transceiver.

The latest Mark II proved to be very much better again. The three response curves published in our present review show the differences between our early review transceiver, a later Mark I and the current Mark II.

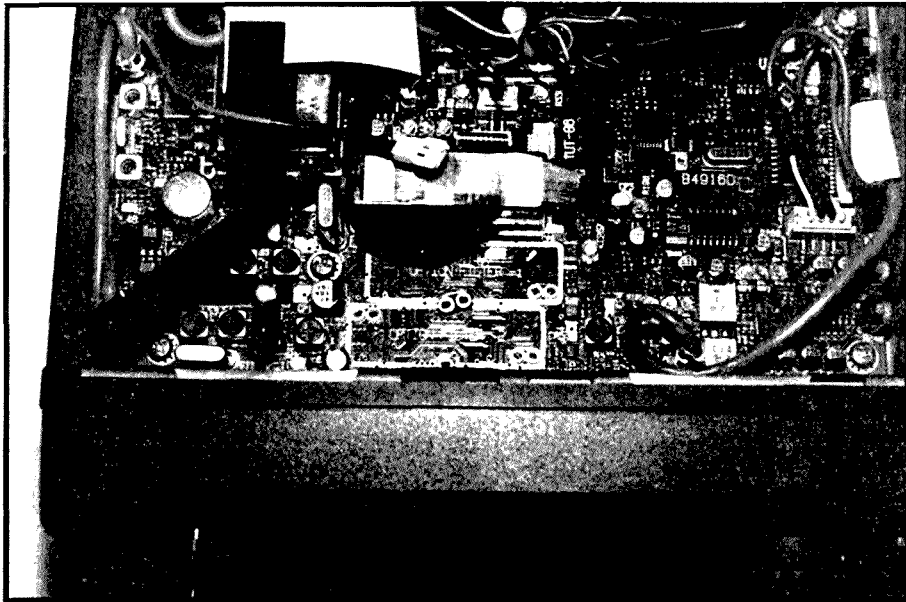
Now, I have to ask the question as to why Icom did not put out a bulletin about this. Why did they allow a poor report on one of their latest models at the time go unanswered? I am sure that their lack of action lost sales. They certainly lost mine.

Talking to Icom Australia recently, I was told that early models with poor transmit audio were modified when returned to Icom Australia for service. If you have an early model, suspect that you may have a transmit audio problem, and it hasn't been back for service, contact Icom and find out what they can do for you.

Having said that, the latest Mark II has very good transmit audio. Reference to the published response curves tell the story. The Travellers' Net co-ordinators gave their seal of approval and on-air reports were very satisfactory.



The Icom IC-706MkII HF + 6 m + 2 m all mode transceiver and the matching HM-103 handheld microphone.



A bottom view of the IC-706MkII with the case removed and the DSP board lifted

Receiver Sensitivity

Now to the next problem of receiver sensitivity. Let me say that I really did not consider this to be an important issue.

On the original review transceiver I was able to hear the local fire brigade service without any trouble and other transmissions in the 170 MHz region. However, I didn't actually carry out any sensitivity tests apart from those on the normal amateur bands. I might guess that many operators would not even use their IC-706s outside the amateur bands.

So, again I called in the services of John Patterson VK3ATQ to do a series of measurements on the latest Mark II and an original Mark I (serial number 1041). They proved to be most interesting (see Table 1). All measurements were taken with the pre-amp on, the transceiver in SSB mode, and a bandwidth of 2.4 kHz.

Measurements were not taken above 180 MHz due to the poor performance of both models.

A word or two of explanation of the figures in Table 1. Where the noise figure of greater than 20 dB is indicated, this shows that the sensitivity is below a useful figure. In this case the sensitivity is labelled as na (not applicable).

Table 1

Freq MHz	IC-706MkI noise sens (dB) (dBm)		IC-706MkII noise sens (dB) (dBm)	
30	6.3	-134.5	6.5	-133.7
40	14.1	-126.2	8.3	-131.9
50	6.1	-134.1	5.2	-135.1
60	5.4	-134.8	6.9	-133.2
70	3.3	-136.9	11.2	-129.1
80	2.9	-137.3	8.9	-131.2
90	4.2	-136.1	9.7	-130.4
100	5.2	-134.9	7.6	-132.5
110	3.9	-136.3	5.1	-135.1
120	8.6	-131.6	9.7	-130.5
130	>20	na	4.8	-135.4
140	>20	na	2.1	-138.1
144	2.3	-137.9	1.9	-138.3
150	>20	na	2.4	-137.8
160	>20	na	4.1	-136.2
170	>20	na	9.4	-130.8
180	>20	na	>20	na

The comparison is interesting. It shows a great improvement above 148 MHz for the Mark II update model and a very slight improvement for the 50 and 144 MHz amateur bands. However, for the aircraft band, the Mark I is slightly better.

The two metre output problem was fixed by increasing the power to 20 watts. A small but worthwhile increase, possibly important if you are driving an external amplifier that requires more than ten watts drive.

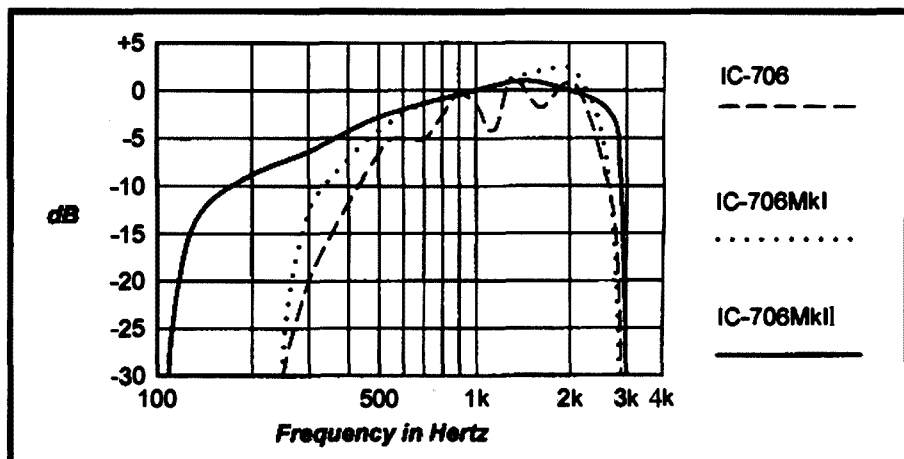
Digital Signal Processing

That's right! Did you know that DSP is available on the latest IC-706? Icom certainly haven't publicised this feature. The only mention I have seen is in the option list of the latest sales brochure. There is no mention of it in the instruction manual at all. Icom promised to fax me the relevant instructions for the DSP but, at the time of writing, this had not arrived.

The DSP unit, the TU-6, is not included in the basic price but is a \$158 option. When installed, a very easy plug-in procedure, it is operated via the menu system (actually S4). If the DSP board is not installed you will only be able to get to S3 in the menu sequence.

The DSP operates in the audio end of the receiver and has an automatic notch filter and noise reduction facility. The noise reduction level is adjustable, again via the same menu setting.

On-air tests showed that the notch filter worked very well and I actually found the noise reduction to give a slight improvement to the readability of signals



Transmit audio response curves of the original IC-706, the later IC-706MkI (s/n 1041), and the IC-706MkII. Measurements were taken with a power output of 20 W at 1 kHz on 14.200 MHz USB with no ALC, no compression, and the carrier set to -40 Hz.

with a noisy background. If you are in the market for an IC-706, give consideration to including the DSP. It is worthwhile. The same DSP unit is also offered as a plug-in option on the IC-PCR 1000 computer receiver.

However, I note with interest that the UT-106 DSP unit is included as a standard feature on all IC-706 Mark II transceivers sold in the UK. They even call it the IC-706MkII DSP.

Other Improvements

That covers the main improvements, but there are several other changes that are welcome and worth mentioning.

The cooling fan is now controlled with a thermostat and only operates when the transmitter reaches a pre-set temperature. This makes for much more relaxed operation compared to the earlier model where the fan was on the whole time.

Split cross band operation is now available if required. For some strange reason this was not possible on the original Mark I.

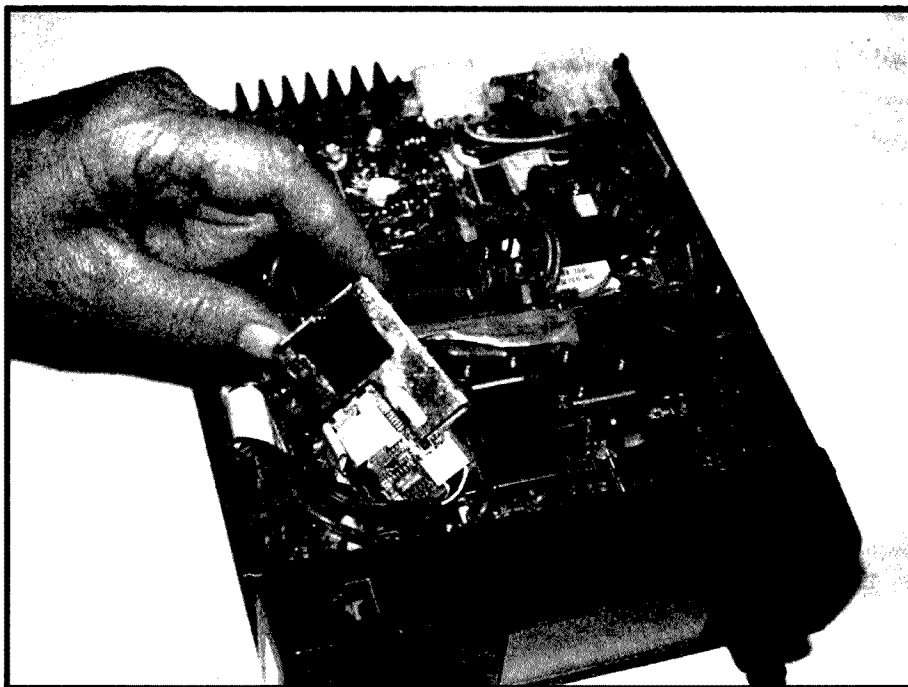
The RIT control of the original IC-706 has gone and has been replaced with a multi purpose 'click stop' control. In addition to RIT this control selects memory channels and also allows moving through the bands in programmable steps the size of which can be selected to suit the mode in use. For instance, 25 kHz is ideal for two metres FM.

The IC-706 Mark I provided space for only one optional filter. Space has been found in the Mk II for two optional filters. You can now have a narrow CW filter and perhaps a wide or narrow SSB filter. There are five optional filters available that include two CW filters of 250 and 500 Hz bandwidth, two SSB filters at 2.8 and 1.9 kHz, and an RTTY or narrow CW filter of 350 Hz bandwidth.

Installation of the filters is easy. They plug straight in and no soldering or removal of circuit boards is required.

IC-706MkII On Air

General operation of the IC-706MkII is a case of good and not quite so good. I guess when you have a front panel of the size to fit this transceiver, the number of controls that can be included is limited. To overcome this, Icom use a menu system, through which a large number



A top view of the IC-706MkII out of its case. The position of the optional plug-in filters can be seen towards the centre immediately behind the front panel.

of functions can be accessed. This is where problems arise.

It might take several button pushes to get to the section that is needed. Such simple things as switching the noise blanker on and off can become quite an exercise. To add to this, a copy of the menu instructions is required to give you a sporting chance of finding what you need.

I believe that Icom have recognised some of these problems and have tried hard to overcome them. A new section of the menu now allows quick selection of the three most used bands. You can program any three amateur bands and select any one of them with a single button push.

However, back to the beginning. Initial switch-on is quite different on the new model. Before the transceiver springs into action, the display cycles through an interesting sequence which includes a complete display readout, transmitter power output status and then any RIT offset. This all takes about three seconds after which the transceiver comes to life on the last used mode and frequency.

Received audio quality is now slightly better through the larger internal speaker although the review model had a decided rattle at around 400 Hz. This was

particularly noticeable on steady tone during our testing procedures. For home station use I would recommend a good quality external speaker.

If you intend to remote control the transceiver in the car, an external speaker is essential as the received audio might sound slightly muffled from under the seat or from the boot.

The feel of the tuning control on the 706 is without doubt the best of the small transceivers and the selectable tuning rates are very well chosen.

IC-706MkII Conclusions

There is no doubt that the IC-706MkII is still a leader in its field with features not available anywhere else. The new Mark II version is an improvement over the original model and a vast improvement over our 1995 review transceiver. Providing you can master the complexities of the menu system, the results you get should be excellent.

The Icom IC-706MkII recommended retail price is \$2691. However, if you shop around you might find it at a somewhat lower price.

My thanks to Icom Australia for supplying our review transceiver and to John Patterson for supplying the comparative receiver figures and the loan of his IC-706MkI. ar

Novice Notes

Ten Metres for the Newcomer

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Introduction

Ten metres (28.000 - 29.700 MHz) is one of the most interesting bands available to the radio amateur. No band supports a greater variety of amateur activity than ten metres - you will hear SSB, AM, CW, FM, repeaters, satellites, DX, award-chasing, contesting and local nets at various times.

Local, interstate, and international contacts are all possible on 28 MHz. Portions of ten metres may be used by all licence grades (except Novice-Limited). The band's wide open spaces and spectacular openings win it many adherents during the peak years of the sunspot cycle.

Propagation

Ten metres is the HF band most prone to variations due to the eleven year sunspot cycle. During the bottom years it is possible to go for months without hearing any overseas stations on ten, but long-distance contacts are an everyday occurrence when sunspot activity is high.

We are currently in the early years of sunspot cycle 23. This is good news to ten metre operators, as openings will become more frequent and produce stronger signals as we approach the sunspot peak, expected for early 2000.

A propagation mode known as sporadic-E provides contacts on ten metres during all phases of the sunspot cycle. Sporadic-E can occur at any time but is most prevalent in summer. Distances covered typically range between 500 and 1500 kilometres, making sporadic-E a useful (but not reliable) propagation mode for contacts within Australia. Signals are often very strong. Mobile stations can do as well as home stations during a good opening.

When there is no long-distance propagation, ten metres is a good band for local operating. Noise levels are lower than on 80 or 160 metres, and antenna requirements are less (particularly for mobile stations). The lack of crowding also makes operating easier. The range and variety of contacts possible is enhanced if your area is lucky enough to be within range of a ten metre FM repeater or simplex gateway linked to VHF or UHF.

Beacons and Repeaters

Because ten metres is 1.7 MHz wide, there is room for modes and activities that would cause interference if carried out on the lower HF bands.

One such activity is beacons. Local clubs have installed beacons to let overseas stations know when ten metres is open to their area. These beacons transmit continuously and send their callsign in Morse. Beacons can normally be found between 28.200 and 28.300 MHz. The *WIA Call Book 99* contains detailed lists of Australian, New Zealand and World beacons.

A special world-wide network of beacons operates on 28.200 MHz as part of the International Beacon Project (IBP). All beacons share the one frequency and are timed so that only one transmits at a time. Australia's IBP beacon is VK6RBP in Perth. IBP beacons also operate on 20, 17, 15 and 12 metres.

Ten metres is most similar to the VHF/UHF amateur bands when it comes to FM and repeater activity. However, ten metres has the added advantage of providing international FM contacts via repeaters during high sunspot years. To use the repeaters, you need a 10 metre FM transceiver that can be set up to transmit and receive on different frequencies to accommodate the repeater's 100 kHz frequency offset.

29 MHz FM Repeater Frequencies	
Input	Output
29.520	29.620
29.540	29.640
29.560	29.660
29.580	29.680

Repeaters permit contacts that would not ordinarily be possible. For example, a station in Sydney may not be able to hear a station in Canberra, but both may be able to communicate via a repeater in Brisbane. Repeater operation gets more interesting if the repeater is also able to retransmit signals from other bands. A list of Australian 10 metre FM repeaters appears in the *WIA Call Book 99*.

Equipment

Commercial Equipment

All current-model HF transceivers cover the entire ten metre amateur band. However, before buying, check that the FM option has been installed, especially if you are a limited licensee restricted to this mode.

Those whose budget does not extend to the four-figure price tag of a new multi-band transceiver may wish to consider buying a 28 MHz-only set, such as those stocked by *Amateur Radio* advertiser Syncro Australia.

Transceivers like these would be particularly suitable for mobile/portable operation or as a second rig for the seasoned 10 metre operator. However, their cost is about the same as a basic multi-band SSB transceiver on the

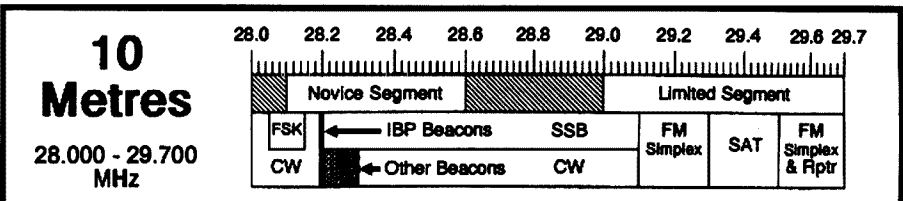


Fig 1 - Ten Metre band plan.

second-hand market. The newcomer to amateur radio should consider the extent to which they will use the other HF bands before deciding to purchase a 10 metre-only set.

Be careful when buying second-hand gear. Some very old valve transceivers did not cover ten metres at all. Other models did include ten metres, but had deaf receivers and/or put out reduced power on 28 MHz.

Some older sets covered only a single 500 kHz segment of ten metres. A 28.000 - 28.500 MHz range is not a great limitation as it includes coverage of CW, digital, beacon and many popular SSB frequencies. However, the owner of a set that tunes 28.500 - 29.000 MHz only is severely disadvantaged. Either avoid buying the set or talk the seller down thirty or forty dollars so you can afford to get a crystal cut for the bottom 500 kHz segment of the band.

Converted Equipment

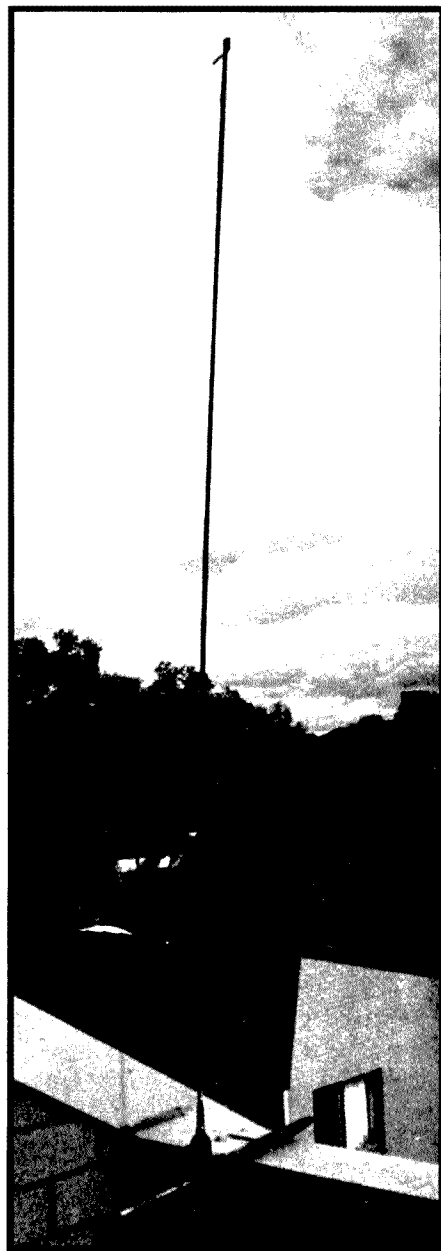
If you have sufficient technical knowledge and the required information (*Reference 1*), it is possible to convert some models of 27 MHz SSB CB transceivers to operate on 28 MHz. If the modification is done properly, the results obtained are well worth the small cost involved. Some of the older AM-only sets can also be converted to ten metres, but this is not usually worthwhile unless you want local contacts only or have a special interest in AM operating.

It is also possible to convert sets to operate on 29 MHz FM. Either some types of AM-only 27 MHz CB radios or 30-50 MHz FM two-way radios can be converted. The need for coverage of the correct frequency range and inclusion of a 100 kHz repeater offset are complicating factors here.

You probably shouldn't attempt any but the very simplest modifications if you are a newcomer - it is very easy to mistakenly 'butcher' the set and render it permanently inoperative. If you still need a small cheap ten metre set, get someone else to do the modification for you, look for a used, already-converted CB (price range \$10 - 100), or purchase one of the Syncro transceivers.

Homebrew Equipment

For some reason, there are few homebrew designs around for 10 metre amateur equipment. However, constructing one's



A simple home station antenna system using a mobile whip.

own equipment on ten metres is certainly possible for the technically-inclined operator. Limited licensees who wish to use 29 MHz FM, but see no point in buying an HF rig, should seriously examine the possibility of building a transverter to use in conjunction with a six or two metre FM transceiver.

Building an entire transceiver for ten metres is also practical. However, circuits for 28 MHz are usually more complicated than those for lower frequencies.

This is because:

(a) the gain of power amplifier

transistors falls as frequency is increased, so more stages are needed to achieve a given output power;

(b) 28 MHz variable frequency oscillators are not as stable as lower frequency VFOs, hence the need for a PLL frequency synthesiser or premix VFO;

(c) Fundamental crystals are not common on 28 MHz, and overtone crystal oscillators are difficult to pull over a worthwhile frequency range; frequency multipliers are needed to obtain output from a lower frequency VXO; and

(d) receiver gain needs to be higher on 10 metres than on other HF bands because noise levels are lower. Nevertheless, for the constructor curious about what ten metres has to offer, a five to ten watt VXO-controlled CW or double sideband transmitter or transceiver should not be too hard to put together.

Antennas

Devoted ten metre enthusiasts often use a three to six element mono-band Yagi or quad. This type of installation allows you to work stations that cannot be heard on a simple dipole or vertical.

However, this does not mean that, if you lack high power and big beams, you should give up on ten metres. It's quite the reverse - ten metres is often better than the lower bands if output power or antenna gain is restricted.

With 10-30 watts SSB and a small vertical (eg a mobile whip), it is possible to have dozens of satisfying contacts. During years of low solar activity, these contacts will be mainly within Australia and New Zealand, but the proportion of international contacts will rise with the sunspot count. The stations with the big beams generally have excellent receive capabilities, and can often hear the operator using a converted CB and a cut-down mobile whip.

A mobile whip mounted on a metal railing or balcony is ideal for omnidirectional coverage. Use a whip reasonably close to a full quarter wavelength (2.5 m) for best results. For the last three years, the author has successfully used a 1.8 metre 27 MHz CB whip cut down to resonate on 10 metres (see photo). A 90 cm whip has also been tried but its performance was well down on the larger whip.

Ten-Ten International

Ten-Ten International is an international association that promotes the use of the 28 MHz amateur band. Any station who works 10 Ten-Ten members is eligible to send away for a Ten-Ten number. These numbers can then be exchanged with other 10 metre operators. People who collect a certain number of Ten-Ten numbers can claim various award certificates and upgrades from Ten-Ten International.

Local groups (chapters) of Ten-Ten members have been formed in cities around the world. In Australia chapters exist on the Gold Coast, Bendigo, Melbourne and Perth. Chapters may run their own nets or issue award certificates to foster activity on ten metres. For example, the Perth-based 28 Chapter runs weekly nets (Sundays 0210 and 0830 UTC on 28.560 MHz USB) and issues awards to operators who contact the required number of members.

Further information on Ten-Ten International is available by visiting their Web site at <http://www.Lehigh.EDU/lists/ten-ten-1/>

Operating Frequencies

Novice licensees can use SSB, AM, CW and digital modes between 28.1 and 28.6 MHz. Unlike 27 MHz CB operation, where lower side band (LSB) is prevalent, ten metre SSB operators invariably use upper side band (USB).

Limited licensees can transmit FM voice on frequencies above 29.0 MHz. This allows use of the FM repeaters that exist in this segment. Intermediate and

Unrestricted licensees can use all ten metre frequencies.

Never transmit between 28.198 - 28.300 and 29.300 - 29.500 MHz. The reason for this is that these segments are reserved for beacons and amateur satellites respectively. Following the 10 metre band plan (Fig 1) maximises the chances of getting contacts and reduces the risk of causing interference.

Operating on Ten Metres

There are many times that ten metres is open, but you would not know about it by just tuning across the band. Beacons can help in monitoring propagation, but have their limitations - the band can be wide open to places where there are no beacons. If you suspect the band may be open, but no beacons can be heard, tune across the 27 MHz CB band (particularly 27.355 LSB) and the 29 MHz FM segment to get a better picture of propagation patterns.

If 27 MHz is busy, but there is nothing on 10 metres, it's up to you to create some activity. Several CQ calls in a popular part of the band (28.400 MHz +/- 100 kHz) will often yield results, even when no beacons can be heard. If no results, change frequency and resume calling - your original frequency may have been in use by people who you can't hear, but could be interfering with your transmission in some parts of the world.

As noted before, the stations with the best antennas are those best placed to receive weak DX signals. When conditions are marginal, you will still have contacts, but it will be only with the stations using the bigger antennas. As propagation improves, you will start to

hear more stations using dipoles and verticals in addition to the 'big-gun' operators with the big beams and high towers.

Possessing a powerful transmitter and large antenna array may give you a big signal on ten metres, but does not in itself make you a successful operator. Operator persistence and 'being there' are the main determinants of success on ten metres. If you are listening and are not calling, everyone will think the band is dead and switch off. If you are keeping the band alive by calling CQ, the activity will come to you, and you will work DX, no matter how modest your station is.

Of course, all this calling requires both time and patience. However, technology can be used to call CQ automatically, leaving time for the operator to attend to other tasks while waiting for calls. In its simplest form, an automatic CQ caller can be a tape recorder with a 30 second endless loop cassette placed in front of the rig's microphone (transceiver set to voice-operated transmit (VOX) mode).

Other options include the use of a 20 second digital message recorder set up with a special timing circuit or even a suitable computer with sound capabilities. Whatever method is used, the switching between transmit and receive should be automatic - having manual switching detracts from the labour-saving benefits of an automatic CQ caller.

Conclusion

This article has given the reader a brief tour of ten metres which, to many people, is HF's most interesting band. The band is set to explode with activity in the next few years. Will you be a part of it?

Acknowledgement

I would like to thank Mark Bussanich VK6AR of the 28 Chapter of Ten-Ten International for his assistance with the preparation of this article.

Reference

1. Franklin, L *The CB PLL Data Book, CB City International, Phoenix, 1991.*

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Optically Coupled Regenerative Receiver

A different way to isolate the input circuit and the regeneration control from the regenerative detector of a receiver was described in June 1998 *QST* by Dan Wissell N1BYT.

A wide band linear opto coupler is used as the regenerative stage. A separate infinite impedance detector is used to provide the audio output. The opto coupler, a Hewlett Packard HCPL-4562, has a low capacitance of 0.6 pF between the base of the opto coupler transistor and the input LED so the input is well isolated.

The receiver detector circuit is shown in Fig 3. The antenna input circuit and the regeneration control are connected to the opto coupler input and are isolated from the base of Q1. Q1 acts as a regenerative amplifier or Q multiplier for the tuned circuit L1 C2. The signal is

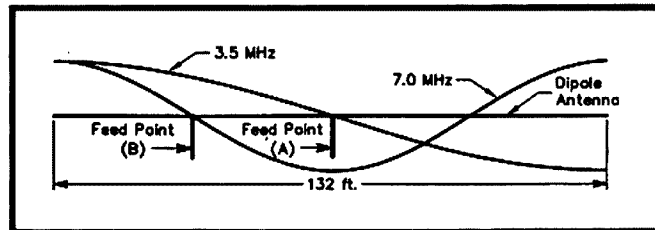


Fig 1 - Voltage distribution of an 80 metre dipole on 3.5 MHz and 7 MHz.

Technical

Technical Abstracts

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Clothesline Antenna

A different multi-band antenna was described in *QST* July 1998 by Robert Victor VA2ERY. This antenna uses hardware sold to make a clothesline. The antenna ends are plastic pulleys used for the ends of a clothesline. These are sold in Canada and the USA and have been seen locally in some hardware shops.

The antenna is a folded dipole on the lowest band. The feed point is then in the middle. On other bands the feed point may be in the middle for odd harmonics but the low impedance feed point is displaced from the centre on even harmonics.

This antenna uses the pulleys to allow the feed point to move to the low impedance point. Fig 1 shows the position of feed points for 3.5 MHz and 7 MHz.

A folded dipole configuration is used for the antenna and this is shown in Fig 2. This allows the antenna feed point to be moved to find a suitable point for operation. The feed is 300 ohms and a balun with a step up ratio of 6:1 is used to match 50 ohm coaxial cable. These are available commercially.

Band changing involves moving the feed point to the appropriate point for the band in use. This can be worked out and then fine adjustment made for best match. The points for various bands can be marked on the wire with a marker.

You may need to use another pulley running along the top wire as a support for the feed point.

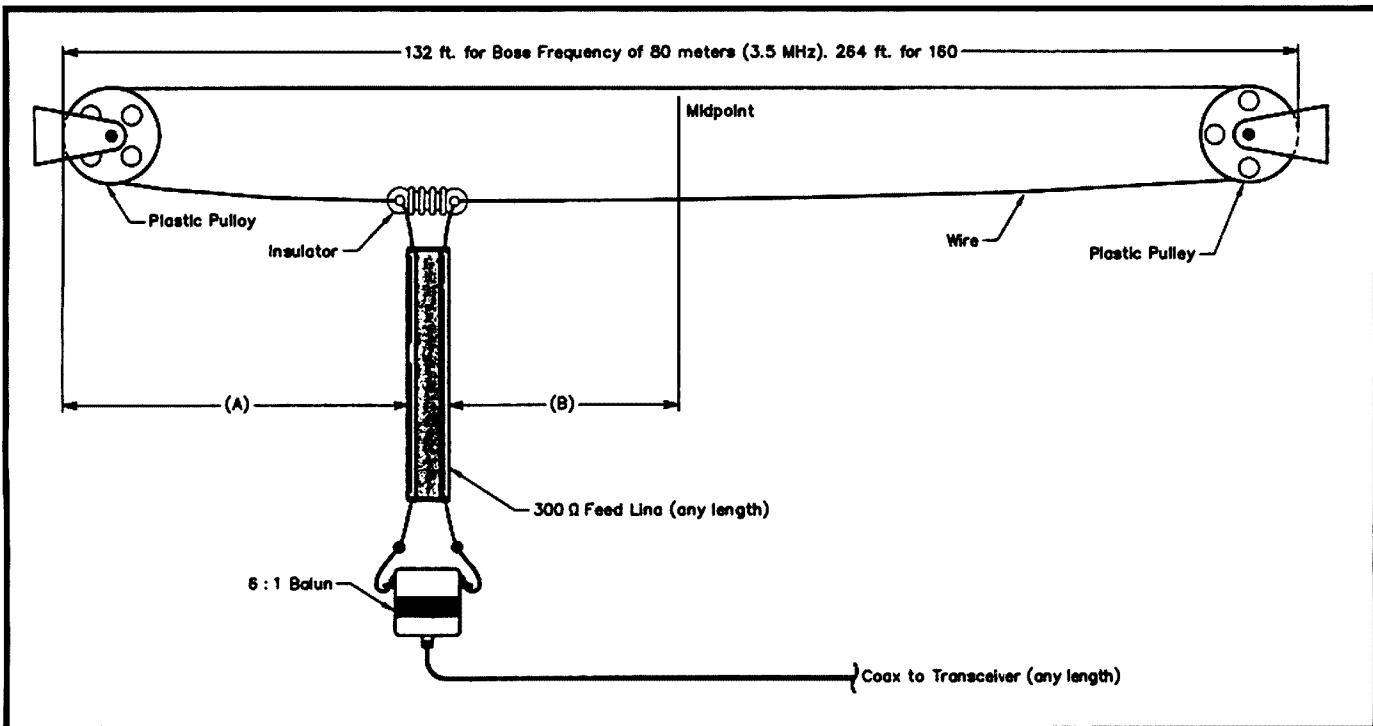


Fig 2 - The Clothesline Dipole. A or B should be set to a quarter wavelength on the band being used.

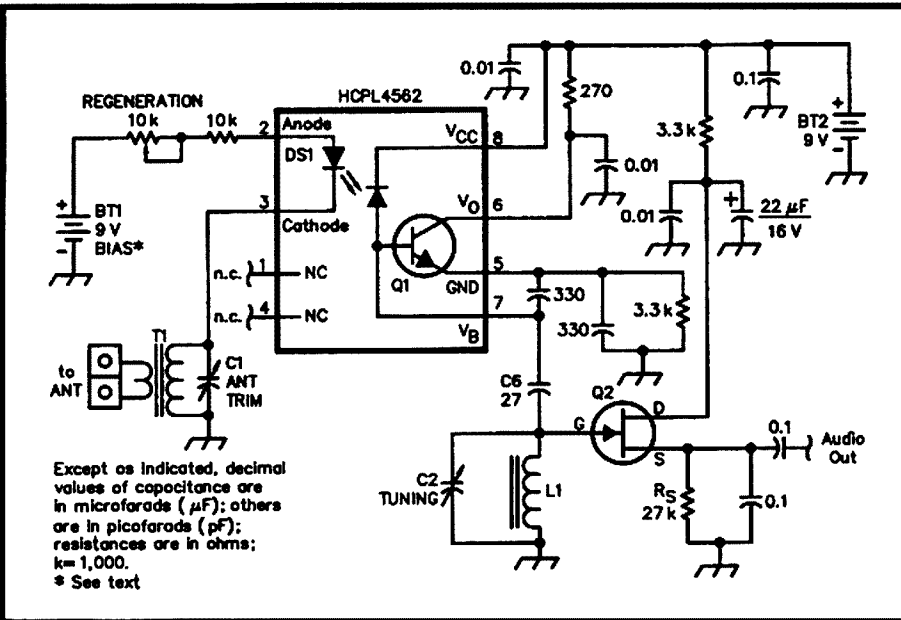


Fig 3 - OCR regenerative detector.

detected by Q2 which functions as an infinite impedance detector. Q1 is gain controlled by the bias applied to the LED. This is the regeneration control. The bias requires a separate battery supply to maintain separation and to ensure low noise. Any noise will be coupled into the regenerative stage and amplified. A regulator would require sub microvolt noise output to function here as the bias supply and so a separate battery is a simpler option.

The circuit of a full 40 metre receiver was given in the *QST* article together with sources of components. The receiver is

available as a kit from Jade Products Inc, PO Box 368, East Hampstead, NH 03826-0368. The US phone number is 603-329-6995. The Internet Web address is <http://www.jadeprod.com/>. The e-mail address is jadepro@jadepro.com. The kit price is \$US84.95 plus shipping and handling. Shipping in the USA is \$US7.00 but to Australia would be higher and you should contact them first. A PCB can be purchased separately.

Audio Peak Clipper

An audio peak clipper with independent adjustment of positive

and negative peak clipping levels was described in July 1998 *QST* by John Robert Burger WB6VMI. This allows tailoring the clipping to suit your voice.

The clipper is shown in Fig 4. The clipper accepts line level audio from the microphone preamplifier at 100 millivolts. The audio is then amplified and clipped. The positive and negative clipping levels are independently adjustable. The clipped audio then passes through an audio filter. The filter is an active filter and is a two pole Chebyshev design which smooths the sharp clipping and reduces audio harmonics out of the voice audio bandwidth.

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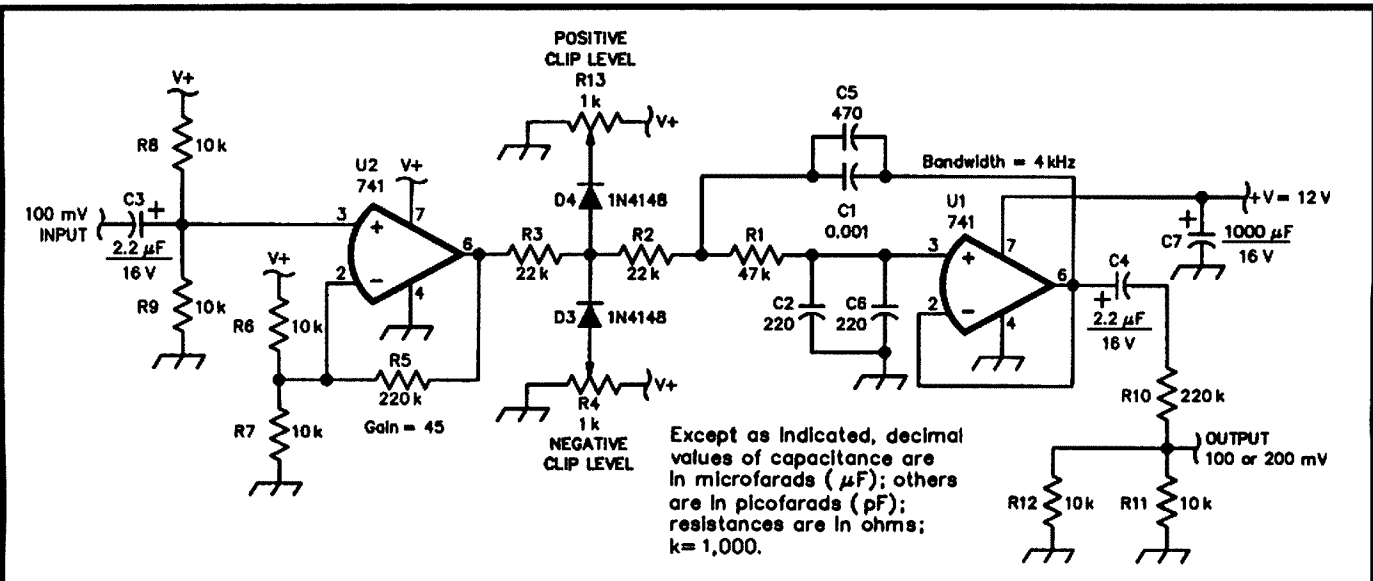


Fig 4 - Audio peak clipper.

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Repeater Link

16 Digit DTMF Decoder

Will McGhie VK6UU
 21 Waterloo Crescent, Lesmurdie WA 6076
 Packet: VK6UU@VK6BBR
 E-mail: will@vale.faroc.com.au

16 Digits

The DTMF decoder featured in past Repeater Link articles only decoded 10 digits. This was done for simplicity, and reducing the size of the design. However, there are a total of 16 digits available for decoding and the accompanying circuit does this. The digits are 0 to 9, followed by * and # and 4 more buttons often called A, B, C, and D.

The output of the DTMF decoder chip is 4-bit BCD and this equates to 16 possible outputs. No modifications are required to the DTMF decoder chip. What is required is to change the BCD-to-decimal decoder chip to one that decodes all the possible 16 codes. The 4514 does the necessary decoding with a valid high output.

Bit Strange

After I built up the 16 digit decoder, testing found that digit "D" would not decode. All the other digits worked but not D. After a lot of trying to figure out what was wrong, I discovered that I was using the A version of the 4514!

Yes, there are different versions of the 4514! The fine print told me that only the B version enabled the D output on pin 11. Why is this so?

The BCD code to produce a high on pin 11 (D) is 0, 0, 0, 0, all zeros. The all-zero BCD code would come up often in digital circuits when they are doing nothing. This would result in there being a high on pin 11 (D). The DTMF decoder falls into this situation.

With no DTMF input the BCD output is all zeros and is of little use. This may be why there are two versions of the 4514. One with the D output enable and one without.

The 4514 is a BCD-to-16 digit decoder and latch. The last DTMF signal results in a high on the corresponding pin of the 4514 that remains after the DTMF signal has stopped. This is not what is wanted and the problem is solved, along with the D problem, by using the output disable pin of the 4514.

In order for there to be an output from the 4514, pin 23 has to be grounded. This pin is only grounded when there is a DTMF signal present and this is achieved by using the valid digit (any DTMF digit) logic on pin 12 of the DTMF decoder chip.

Note that, even with no input to the DTMF decoder and all BCD lines being zeros, and hence D being high, D is actual low due to the outputs of the 4514 being

disabled via pin 23 of the 4514. Problem solved.

The B Version

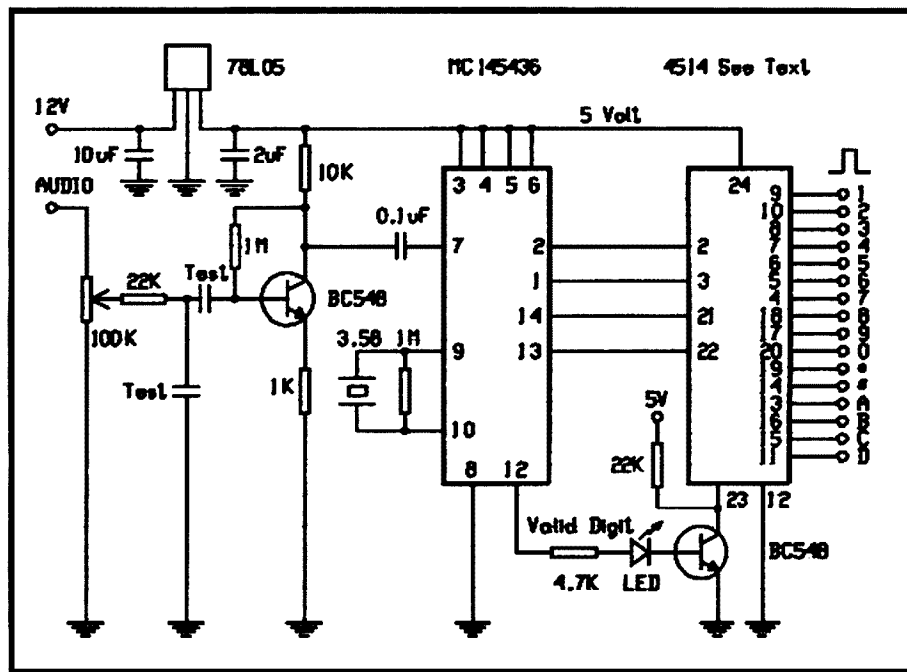
Don't be fooled by what is a B version of the 4514 if you want to use digit D. Printed on the 4514 chips I have is CD4514BCN. It appears that the B after the 4514 does not mean it is a B version chip as the D output does not operate in the chips I have. If you know of a source of B version 4514s, please let me know.

Photos

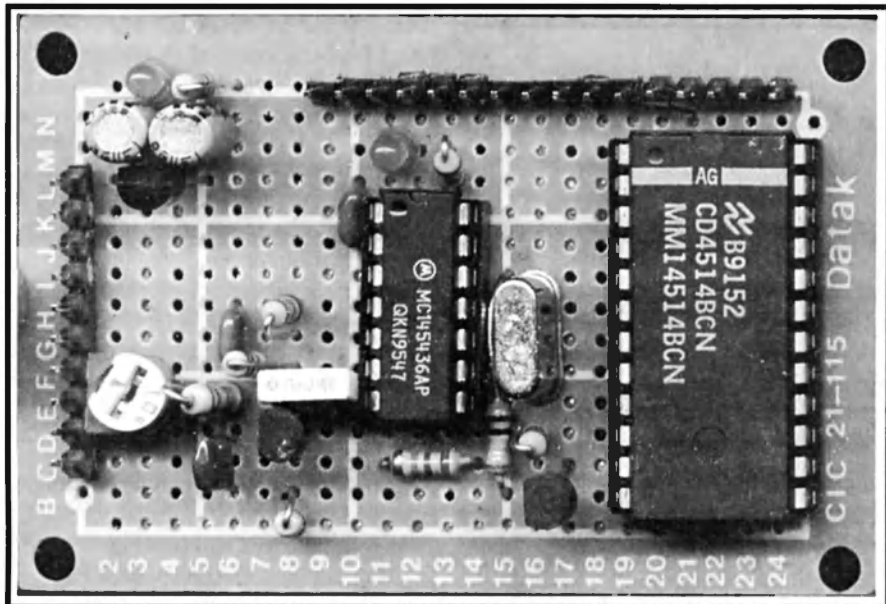
I have included two photos of the construction of the DTMF decoder using Tandy board. This type of Veroboard is now also available from Dick Smith, catalogue number H 5603, and measures 72 X 47 mm.

Note that the pads are isolated from one another, unlike normal Veroboard, and require joining. This is done by using a cool soldering iron to bridge the gaps. If the iron is too hot the solder tends to run back to each pad making it hard to bridge them. I find having to join pads is easier than having to isolate pads in the older style of Veroboard.

The photos are not intended to be copied but are simply to show one form of construction. Note that there are two connectors on the board. The 10 pin SIL on the left is for power and DTMF audio



Schematic of the 16 digit DTMF decoder.



A top view of the completed 16 digit DTMF decoder.

in, etc and the 16 pin SIL at top right is the 16 digit outputs.

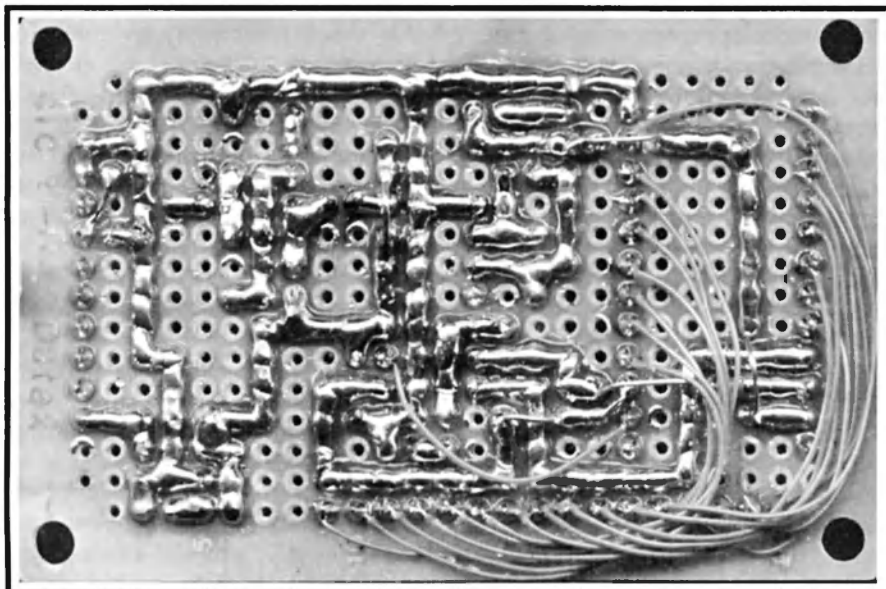
The photos were not taken with a camera but a flat bed scanner. The depth of focus on a flat bed scanner is considerable and the results very good on 3D objects.

These "photos" were then JPEG compressed and e-mailed to *Amateur*

Radio. The joys and ease of the digital computer age when it works!

Next Month

Next month, some thoughts on 10 kHz spacing of repeaters on the 2 m band. This idea has been put forward by Robert VK2MT for comment and I will present his ideas for your consideration. **ar**



The underside of the 16 digit DTMF decoder board.

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I feel I have succeeded in adding a CW practice oscillator to the shack and without adding yet another gizmo, gadget, box, or converter to the already cluttered desk top. But I've failed dramatically in the programming area. I originally set out to achieve the goals listed below but was totally overwhelmed:

General

1. Windows program.
2. Adjustable frequency of the tones.
3. Adjustable volume of tones.
4. Output tones to the sound card speakers for better fidelity.
5. Choice of straight or paddle key mode.

Straight key mode

1. Display the text as I practice keying.
2. Calculate and then display WPM.
3. Display unrecognised characters as errors, possibly with an *.

Paddle key mode

1. Adjustments for speed and weighting.
2. Display a WPM figure as a function of speed and weighting.
3. Iambic keying.
4. Ability to remember characters when keying ahead.

Conclusion

The finished product is a simple bare-bones Morse code practice oscillator for your shack with many avenues for improvement.

Rather than using the computer as a practice oscillator, could it be used as a keyer, too? Key IN on the game port and OUT on the parallel port? Drive an IC chip or relay to key the radio? Memories in software for contesting?

Are the hardware based keyers doomed to be obsolete? Who knows, the sky's the limit.

The great programming feat I leave to my fellow amateurs. If you succeed, please send me a copy as I would love to use it. Good luck.

About the Author

First licensed as a Novice Class in Los Angeles as KB6PCD in 1986, Steve followed this with a Technician Class in 1988, the Advanced Class in 1988, and the Extra Class in 1989 as AA6SN. Steve visited Australia in 1991 and acquired the callsign VK6BGN. He eventually immigrated to Western Australia in 1995.

ar

Computers**A Simple CW Practice Oscillator**

Steve Page VK6BGN/AA6SN
PO Box 383
Wickham WA 6720

Introduction

After arriving in Australia a few years ago I decided one day to brush up on my Morse code sending speed as it had fallen well below the 20 wpm I had originally attained for my extra class licence in North America.

After looking through the junk box for parts, I discovered that I had either sold or donated most of my parts before immigrating; not even a 555 timer could be found. Looking around the shack for some sort of tone generator, my thoughts were directed to my IBM compatible computer. It can generate tones, has a speaker for sound output and the game port as an input port for the key. I then decided to make my practice keyer software based, rather than hardware based, and this is what I did.

Input Port, Parts and Pin Outs

I chose the 15 pin game port because it is not being used, I do not own a joy stick, it will provide a direct connection to the Morse code key, and both serial ports and the parallel port are being used by permanent devices such as the printer, mouse and SSTV converter. It is also my understanding that the serial or parallel ports would require some sort of interface.

You will need a DB15 male plug which is available from Dick Smith Electronics, and two lengths of wire long enough to go from the game port on the back of your computer up to the top of the desk where the Morse code key is. This wire should be small in diameter. I used twisted pair bell wire of about 0.5 mm diameter. Good soldering technique may be in order here as the pins on the DB15 plug are quite small.

I soldered the wires onto pins 2 and 4 on the DB15 plug. This would normally be the lower button on the joy stick. Other pins on the plug can also be used but a change in programming would be needed. All pin out information for the DB15 game port can be found in the back pages of the DSE catalogue.

The Program

I chose Q-Basic as the programming language because I found a copy of it in my DOS directory and I was able to purchase a cheap programming book from a second hand book store. However, I am sure other languages could be used, and probably should. Probably a Windows based program would be better.

The program is very simple and only uses a few lines of code. Nothing elaborate here. As a matter of fact the screen will be blank while running the program. To exit, just hit the Escape key.

```
CLS
DO
ans$ = INKEY$
IF STRIG(1) = -1 THEN a% = 1 ELSE
a% = 0
SOUND 800, a%
LOOP UNTIL ans$ = CHR$(27)
END
```

Now plug the DB15 connector into the game port, hook up your Morse code key and run the program. While holding the Morse code key down, an 800 Hz tone will be heard from the PC speaker; of course, nothing will be heard when the key is up. You may change the number 800 to any number that suits your ear. Be realistic; anything below 37 and above 32768 will not work, at least on my 486 DX100 computer.

History

Ron Morris VK3APM (SK)

John L. Morris VK2BES
PO Box 202
Kiama NSW 2533
e-mail: vk2bes@ozemail.com.au
Packet: VK2BES@VK2XGJ

Ron Morris VK3APM, a dedicated radio enthusiast for more than seventy of his long life of ninety three years, passed away on 23 August 1997.

He was born in Ballarat, Victoria in 1904, only three years after Marconi established communication between Cornwall, England (where Ron's mother was born) and Newfoundland, Canada. He came from English, Irish and Welsh stock and attended the Ballarat School of Mines which will be known to many readers. During that period he developed an interest in radio, constructed his first receivers and became proficient in Morse Code.

In early days, permits to transmit were issued by the Department of the Navy. Ron passed the required examination and was issued with a callsign which I believe was A3AP (see reference to *Radio Weekly* below). After about 1920, the Department of the Post Master General (for younger readers, that Department was a combination of what are now Telstra, the Australian Communications Authority and Australia Post) took over the issuing of licences.

In 1925 Ron was issued the callsign VK3APM. His AOC (Amateur Operator's Certificate of Proficiency) No 150 was issued on 22 July 1925. He was commended by an official of AWA (Amalgamated Wireless of Australia) as an exceptional candidate.

The *Radio Weekly* published an article in its 25 March 1935 edition entitled "An Up To Date Amateur Radio Station - A Description of 3AP to Become VK3APM". A photograph shows the gear and the article states "Herewith is a description of 3AP, Mr Ron Morris's up-

to-date station at Caulfield, which is frequently heard on both long and short wave amateur bands...the receiver consists of one stage of tuned anode detector and one stage of audio...the aerial is a four wired tapered cage, 50 ft high and 80 ft long...."

First Utility Mobile Radio

In 1929 the PMG granted a licence to the Victorian Electricity Commission to experiment with one way voice transmission to vehicles. The Police Department, Fire Brigade and Tramways Board were also proceeding in the same direction. Ron became involved in radio communication with the SEC and built their first mobile receiver.

One of the senior officials of the SEC was home with an injury and Ron visited him, leaving the volume of the mobile radio turned well up as he parked the car outside. They both were jubilant as the sounds of the Tramways Board transmitter could be clearly heard from inside the house.

The SEC then decided to build a transmitter of its own. The first transmitter was based on a Philips 250 watt valve, a self excited oscillator, and simple grid modulation.

The antenna was an 80 ft counterpoised mast. Improvements came thick and fast - indirectly heated filaments, motor generators, vibrator power supplies and two-way frequency modulated transceivers.

Initially the SEC used Singer cars, then A Model Fords. Ron devised an antenna from army surplus 100 ft lengths of wire, winding the wire in a huge coil around and under the fabric hood until

the 100 ft was used up. It is reported that it worked well - unless wet!

As can be well imagined there was "some interference" from the ignition system of the vehicle. However, the drivers did not complain.

Being the driver of a vehicle with a radio in it carried a kind of status at that time and, in addition, they were reported as being interested and enthusiastic in this radio experimentation!

The transmitter VHO was located first at Richmond and then in Flinders St. It was remotely controlled and did double duty for the SEC and Tramways Board. Amusingly enough, although it may have been looked upon as very serious business at the time, the operators were issued with a new axe on the outbreak of WW2 together with instructions for the destruction of the transmitter in the event of invasion. It would be a real test of national spirit to have to destroy such a labour of love, especially with an axe (why not something really technical like a zap of 66,000 V AC which the SEC could surely provide?).

After forty years of service, Ron retired from the SEC in 1969. A letter to him from the Secretary of the SEC (Mr Chippendale) states that Ron Morris "was responsible for the building and installation of the first mobile telephone system to be licensed in the Commonwealth".

Link With Flynn of the Inland

No documentary evidence is available but, from information provided by his son, it appears that Dr John Flynn sought advice from Ron with regards to communication problems with the fledgling



Amateur Radio Best Contribution Awards

Each month the WIA *Amateur Radio* Publications Committee selects the best contribution to that month's magazine and awards a certificate to the contributor concerned.

The first two have been announced in *WIA News*, but the succeeding three have been accidentally omitted. They are: for July 1998, Sally Grattidge VK4SHE now retired after years of effort in compiling the ALARA column; August 1998, Gil Sones VK3AUI (Technical Abstracts); and September 1998, Ron Fisher VK3OM (review of the Yaesu FT-847 transceiver). Certificates have been sent to all these award winning contributors. ar

Inland Mission Service (later the Royal Flying Doctor Service). In Ion Idriess' book "Flynn of the Inland" (1936) there is a reference to the difficulties of developing a receiver/transmitter that was simple, robust, and inexpensive so that "every bush mother could handle it". "What a madman's dream", he wrote, "but the wireless men could not resist him or the dream, though they doubted its realisation....then they set to work, each in his own way, in his own time, in his own workshop".

Such a description typifies Ron VK3APM (and so many other amateurs of the day) who spent countless hours alone in their amateur workshops conducting countless experiments with mostly old pre-loved gear and army disposals equipment from two wars.

Ron was ever willing to share his extensive knowledge of the art, craft, and science of radio communication in the best tradition of the hobby. As Ron's nephew, and being about 12 years of age at the time, I recall that, after being quite excited by a conversation about radio with Ron, I was presented with a 1927 edition of the ARRL Handbook (at that time only about 2 cm thick). That dog-eared well-used document became a prized possession and the source of all kinds of arcane knowledge and experimentation (some of which worked). I eventually became VK3AES (now VK2BES), having received my AOC

Try This

Yoghurt Container Sound Projector

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Peter Parker VK1PK
7/1 Garran Place
Garran ACT 2605
e-mail: parkerp@pcug.org.au

Yoghurt containers have a number of uses in the shack. These include holders for pens, components and other bits and pieces.

Here is one more use for your spare yoghurt containers. It is a sound projector, which projects the received audio towards the operator rather than towards the ceiling. It's a useful accessory if your transceiver has an upwards-facing speaker and you lack an outboard speaker unit.

Construction

Construction is simple. Firstly choose your yoghurt container - 200 g for small speakers and 1 kg for larger speakers should be fine. Then make a large square hole in the side of the container. This could be done with an old soldering iron or with a heated nail (use a gas stove) held in a pair of pliers.

Do this type of work in a ventilated area or outside to minimise exposure to

fumes from melting plastic.

Operation

In use the inverted yoghurt container is placed on top of the transceiver's speaker with the square hole turned towards the operator. There should be a small improvement in weak signal readability compared to when the transceiver is used without the projector. ar

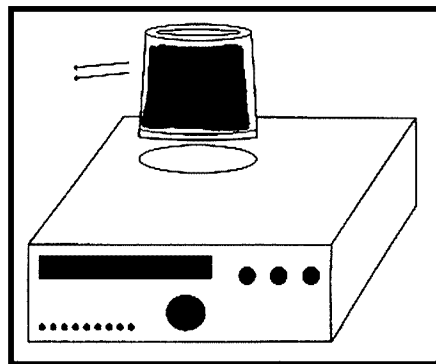


Fig 1 - Yoghurt container sound projector.

in 1958 after studying at the same Marconi School of Wireless in Melbourne which Ron attended so many years before. What a grand tradition we have in amateur radio!

Right up to the last year of his life Ron was active in amateur radio, mainly on 21 MHz and on CW. What memories he must have had in his latter years - his life spanning the development of radio in this country from the days of spark transmitters and coherers to the high speed digital modes of today.

Errata or Further Information

This brief article about Ron was prepared from material gathered by his son Allan, who now resides in Perth, WA. If readers find errata in this chronicle, please be assured that such errors were unintentional; I found it is not easy to obtain this kind of historical material after such a long time span. If you have any further information or corrections, please send it to me at one of the addresses at the head of this article. ar

Book Review

WIA Call Book 99

Publisher: Wireless Institute of Australia
Size: 270 by 210 mm, 168 pages, soft cover
Reviewed by: Bill Rice VK3ABP

Even if you have a copy of last year's Call Book, there are still very good reasons to invest in the latest issue, just "hot off the press".

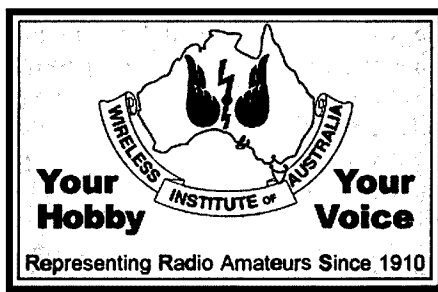
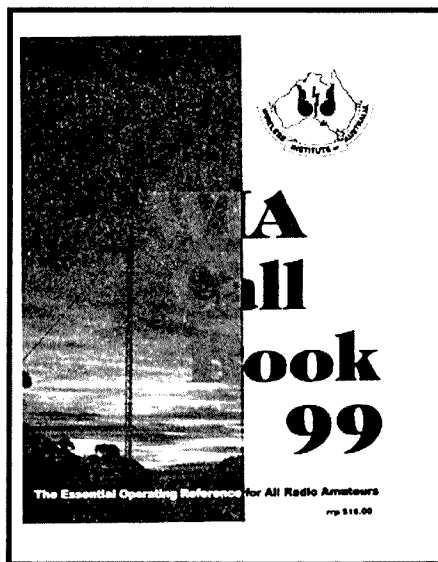
To begin with, at 168 pages, it is by far the largest WIA Call Book yet produced. The latest lists of callsigns occupy 92 pages and you will be pleased to know that those with two-letter suffixes again appear before the three-letter calls in each State.

The other 76 pages comprise not only the updated lists of beacons and repeaters, as usual, but all the WIA Band Plans, the world's 6 metre, 10 metre and HF beacons, and all the Australian AM and FM broadcast stations. But that's not all! There is a feast of information about

becoming a radio amateur, how the Exam Service operates, a packet radio directory, Australian and New Zealand TV channels, VHF-UHF records and dozens more related topics.

An added bonus is a *Callsigns on Disk* supplement available for an additional \$10, but only to purchasers of the *WIA Call Book 99*. This 3.25 inch floppy disk contains all the Australian amateur station listings in a vertical-bar delimited ASCII file ready to be loaded into your favourite word processor, spreadsheet or database.

At a recommended retail price of \$16.00, it must be the best value-for-money Call Book in years!



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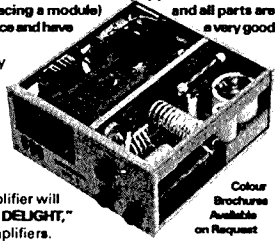
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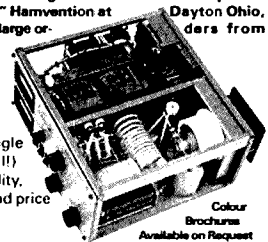
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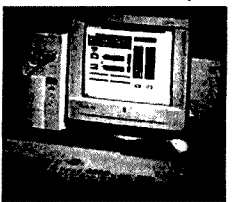
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■ Book Review

The Novice Operators Theory Handbook

Author: Graeme Scott VK2KE
Reviewed by: Ron Cook VK3AFW
ISBN: 0 646 30162 4
Paperback: 297 by 210 mm, 92 pages
RRP: \$16.00

General

There are three reasons why you might want to buy this book. Firstly, you do not have an amateur licence but would like to have one; secondly, you might know of someone who would like to be an amateur and you would like to give a useful present to them; and thirdly, you might want to run a class for aspiring amateurs. This book is an admirable solution to any of the above situations. Whilst I found minor imperfections in the text, I can recommend it as an inexpensive reference for the would-be Novice Operator.

Graeme Scott is an amateur and a teacher of many years experience who has combined both attributes to produce this book. It is written in an easy-to-read conversational style with lots of diagrams and very little maths. For those undertaking a private study course based on this book, there is a companion volume, the *Novice Operators Theory Study Program* also written by Graeme.

What's In It?

In some 92 pages Graeme covers all the essential background material required, not only to pass a Novice amateur licence exam, but also to provide a basic understanding of the technology of radio communications.

There are 14 chapters which cover the complete theory required for the Novice Amateur Operator's certificate exam and are intended to be used for a self training course or as the text for a classroom teaching situation. Having read a chapter, the reader can then test their knowledge on questions at the rear of the book. The answers to these questions can also be found at the end of the book. There is an

appendix which covers the Morse code and another which is a glossary of technical terms.

The first edition was published in 1981, and the book has been responsible for helping several thousand students become happy amateurs.

More On What's In It

Ohms Law, and the most basic physics and maths relating to series and parallel connection of resistors, cells and batteries, electromagnetism, AC generation, transformers, relays, inductors, capacitors, tuned circuits, piezoelectric effects, the decibel and attenuation are covered in Chapter 1. The treatment is generally very good and Graeme is to be commended for the copious use of illustrations and figures, not only in this chapter, but throughout the whole book.

However, I do have a minor criticism of this chapter. Although the terms "logarithm" and "log" are used, neither is explained. It may be apparent that "log" is the abbreviation for "logarithm", but what is a logarithm? It is not an easy concept to explain which is probably why even the *ARRL Handbook* omits any explanation. (Common logarithms are numbers to which the number 10 must be raised to give other numbers. For example 0.301 is the logarithm of 2, that is $\log(2) = 0.310$. It means that $10^{0.301} = 2$. While this may seem a clumsy thing to do, before the advent of calculators and computers, logarithmic tables were

an indispensable aid to doing complicated engineering maths. Further, the use of logarithmic numbers simplify many other mathematical expressions.)

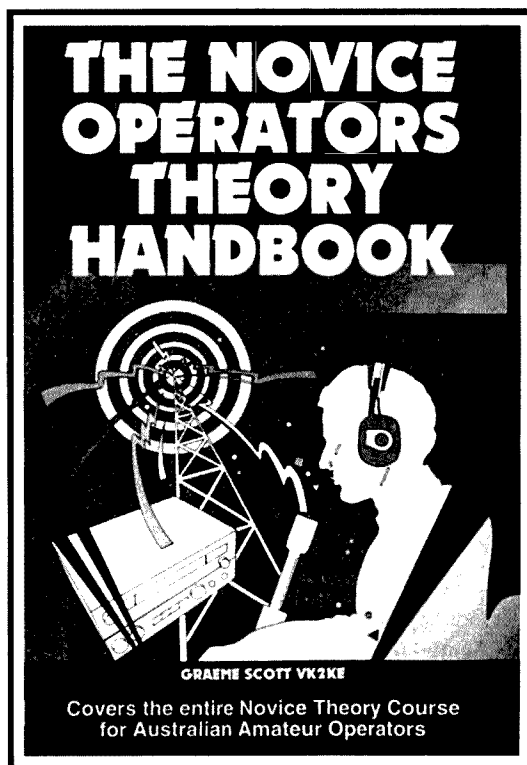
Chapter 2 is two short pages with common symbols and their names. The graphics tell it all.

Chapter 3, Mathematics, is also very short. Too short I thought, as it says that, amongst many other mathematical topics, the student needs to be able to understand graphs and binary logic, yet neither topic is covered here.

Graphs appear in profusion elsewhere in the book, but the basic theory is not in this chapter. Of course it might be argued that by the time you get to reading this book you will have developed a grasp of graphs. Binary logic is absent totally from the book. The section on decibels in Chapter 1 probably should have been in this chapter. Otherwise, the treatment is good.

Semiconductors, vacuum tubes and power supplies get an adequate treatment in Chapters 4, 5 and 6. The emphasis is, as would be expected, on principles rather than practical construction hints. Again there are many carefully selected diagrams.

Amplifiers and oscillators are dealt with in Chapter 7, although strangely, I thought, oscillators are dealt with before amplifiers. The treatment is clear and concise and well illustrated.



In the next two chapters, Graeme covers transmitters and receivers, using plenty of block diagrams and illustrations and minimal circuit diagrams.

Chapter 10 explains the essence of ionospheric propagation. As Novices can use VHF and UHF now, a paragraph and a diagram or two on tropospheric propagation might have been expected.

The important topic of antennas and transmission lines is discussed in Chapter 11. Whilst it is adequate in coverage, there is a possibility of confusion over what a noise bridge is as this instrument does not get another mention except to say it is required to measure the feed impedance of the antenna. Earlier in the text, reference is made to using an SWR meter and one of the illustrations shows a VSWR meter in circuit.

Chapter 12, Test Equipment and Measurements, describes the use of permanent magnet moving coil instruments as DC ammeters, DC and AC voltmeters and ohmmeters. The use of frequency meters is discussed, but their basic operating principles are omitted. The dip meter scores more than a page to itself. There is a good treatment of the CRO, including its use at audio and RF frequencies for signal analysis.

Chapter 13, for those unlucky enough to have interference, discusses the cause and cure of interference.

The last chapter, 14, gives attention to the important topic of safety. It is a comprehensive treatment and good sound advice is given; however, one cryptic statement deserves elaboration. "PCB's - these are toxic." This is true but what, the novice may well ask, is a PCB? It could be a printed circuit board, for example, and the glossary at the end of the book does not help. I would like to see some additional text explaining that some capacitors and transformers contain oil, some oil contains a chemical known by the letters PCB and contact with this chemical can cause cancer.

Conclusions

Graeme is to be congratulated on his achievement in producing a book which has had such a long and successful life.

Although this is the third edition, some minor editorial matters have slipped by. There is apparently some confusion as to whether or not to use capital letters

Book Review

The Novice Operators Theory Study Program

Author: Graeme Scott VK2KE

Reviewed by: Ron Cook VK3AFW

ISBN: 095873660X

Paperback: 298 by 210 mm, 32 pages

RRP: \$10.00

This book is intended to be used with the *Novice Operators Theory Handbook* by the same author. It is the ideal substitute for classes at a local TAFE College, WIA centre or Radio Club.

The book provides the student with a self-paced learning program. In essence, after reading a chapter in the handbook, the student attempts to answer multiple-choice questions from this book.

There are from 10 to 60 of these questions per chapter. After selecting the answers to the questions, the student can check these against the "Master Answers" at the end of the questions section. If the wrong answer was given, then the chapter in the handbook could be reread to clarify that point. Thus the student can obtain rapid feedback on his/her comprehension of the material in the handbook.

Having completed the course, the student will want to know how close to passing the exam they might be. Graeme has thoughtfully included a trial examination at the end of the book. Again the answers are provided on the last page so the student can mark their effort.

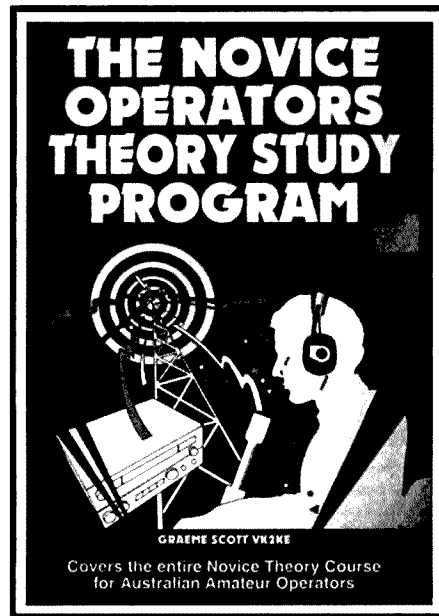
Whilst I did not check the answers given for every question, those that I did check were accurate. The only deficiency found was the omission of a circuit diagram in the trial exam.

I would have liked to have seen more questions on some of the topics, however the salient points seem to have been properly covered.

Conclusions

Strongly recommended for anyone undertaking a study course based on the *Novice Operators Theory Handbook*.

Score: Four and three quarter stars out of five.



for megohm, megahertz, kilohertz and kilometre for example. (Lower case applies for measurement units used in mid sentence and spelt in full and the abbreviations use capitals when they represent multiples greater than 1,000 as in MΩ or MHz but lower case is correct for smaller multipliers such as kHz and km). Any text book needs to be carefully

checked to eliminate these inconsistencies.

Nevertheless, as I said in the beginning, the deficiencies are minor and I have no hesitation in recommending this book to the reader, either for themselves or as a present to a budding Novice Operator.

Score: Four and a half stars out of five.

■ Operating What a Weekend!

Christine Taylor VK5CTY
16 Fairmont Avenue
Black Forest SA 5035

The aerials all worked the way they should. We made lots of contacts here and overseas. We heard and saw MIR gliding across the sky. Although the weather was very trying we had a great weekend.

It was the John Moyle Memorial Field Day weekend and we were on a 75 acre (30 hectares) scrub block 22 km from the nearest town.

Nine members of the Adelaide Hills Amateur Radio Society operated the club station VK5BAR using three wire aerials and the club's portable TH3 Jnr beam and mast.

The wire aerials were an inverted Vee for 40 metres, an end-fed Zepp for 80 metres, and a long wire used for 15 metres. The beam was used for 20 metres. We ignored two metres and six metres as we were too far away from the city; and, although we listened, we heard no-one on 10 metres or 160 metres. All contacts were phone.

The inverted Vee was 33 feet per side used with a balun for coax. The cable was dropped down the centre of a length of plastic pipe, which was tied with 'occy straps' to the top of a section of a Hills triangular tower. The tower and the ends of the wire were all tied to trees with ropes. An antenna tuner and a Kenwood TS-820 sitting on a table under the trees (with a beach umbrella to shade the gear, not the operator) were used for 40 metres.

To support one end of the Zepp aerial (with a standard egg insulator and a short length of copper wire to tie it to the pipe) a double length of water pipe was raised upright and tied with tie-wire to a star dropper driven into the ground. The Zepp was 135 feet long and terminated with egg insulators to open-wire ladder line. This end of the Zepp was tied to the top of a convenient post (on the outdoor picture screen already on the scrub block). An antenna tuner in the back of a

van and a Yaesu FT-7 were used for 80 metres after dark.

The long wire used for 15 (and 10) metres is the one regularly carried by the 4 wheel drive vehicle that was this operating station. The far end was pulled up to the top of a 'windlight' tower with a rope carried up there by one of the operators. This station used a Yaesu FT-890 mounted inside the back of the 4 wheel drive vehicle. The operators were protected from the sun by a beach type gazebo.

The AHARS beam had been carried up to the block on the pack-rack of a van, with a cardboard box full of ropes, etc inside the van. The components of the beam and mast are laid out in Photo 1.

Three trapped elements (colour coded and numbered to avoid errors) are ready to be slipped into the clamps on the beam and tightened. There are socket spanners of the appropriate size permanently tied to the beam at either end. These slip into the plastic end caps of the beam so they are protected from the weather but ready to hand when needed.

On the day, all the pieces were spread on the ground and assembled. The only



Photo 1 - The disassembled TH3 Jnr beam and mast.

extra tool needed was a smaller socket spanner or a pair of pliers to tighten the bolts that hold the beta-match wires to either side of the driven element. Now the beam was ready to be bolted onto the mast.

The mast was first extended to its full height (twice the length, as carried) and pinned with the bolts attached. Then the bottom end was placed in the hinged saddle in the middle of the car wheel, which has a bearing inside to carry the weight of the set-up. The car wheel was

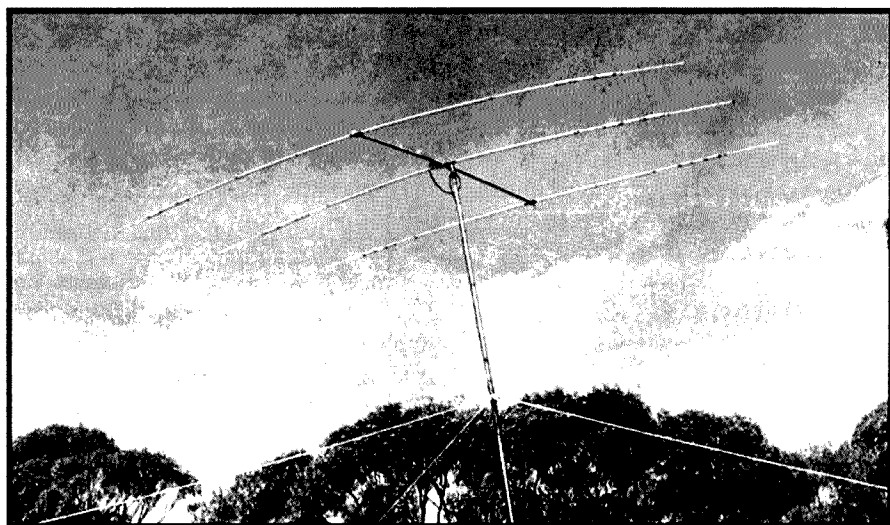


Photo 2 - The assembled TH3 Jnr and mast, ready to operate.



Photo 3 - See text.

pegged down with four long tent pegs and the other end of the mast lifted high enough to be able to join on the beam. In this position it sat on the top of a T-bar resting on the ground (Photo 3).

Once the beam was bolted in place, the three guy ropes were tied to the loops on the mast and three people nominated to pull on them when so directed. It did need two or three tall men to push the mast up with the assistance of the rope pullers but it all went up very neatly. When everyone was happy that the mast was vertical, the ropes were tied off to whatever trees were nearest. The coax from the tri-band beam was fed inside a shed where a table was set up for the Yaesu FT-101Z used for 20 metre contacts.

When the beam needs to be turned, it can be manually re-located with a handle mounted just above the rim of the car wheel. In a strong wind this handle can be pegged in place with another tent peg.

The disassembly was just as easily accomplished. This portable mast and beam is a credit to the AHARS members who made up the components a number of years ago. It has been used for Field Days and JOTA ever since. It is a resource that other radio clubs might like to copy.

Most of the operators using the club station callsign either did not yet have any callsigns or did not have full calls. There were three Full Call operators, Geoff VK5TY, John VK5WBJ and Christine VK5CTY. John VK5KMI had had some HF contacts with his Combined Call but Robert VK5ZHW, Alby VK5TAW and

Tina VK5TMC had had only VHF experience before. Graham and Linden had both passed their Full Call theory but had never before held a microphone.

By the end of the weekend all but Linden had made contacts and even Linden (11 years old) was seen with a microphone in his hand at least once, although he spent most of his time logging for the others and learning to 'hear' those callsigns that can be so difficult to distinguish at first. I am sure that next time he, too, will be brave enough to make a contact.

Murphy had something of a field day, too, this weekend. He did turn on very hot weather. On the Saturday the temperature reached 39° C in the shade though it had only got to 37° C by the end of the contest at 11.30 am local time on Sunday. The operators and loggers were supplied with water all day and, to make them feel

entitled to feel hot, they also had Fahrenheit thermometers in front of them. Once they registered 100° F any more was unimportant, and it provided something to talk about to other operators.

Murphy also got to the equipment. One of the two Yaesu FT-101s just wouldn't receive. A Kenwood TS-520 blew a filter capacitor with a large cloud of white smoke. A set of batteries just didn't have the capacity to run the other FT-101 so that had to run on 240 V AC from a generator. One of the cars had a flat tyre and we had more tea drinkers than anticipated so we had to get emergency supplies. Other than that everything went well.

It was great to see and to hear MIR as it passed overhead, and the showers (warm if you wanted them to be) were beautiful. So were the comfortable beds. As it happened, the last person to have a shower realised that all the previous showerers had been under observation. On the shower curtain was a female huntsman spider and 50 or 60 baby huntsmans. They all fell victim to a squirt of insect spray but the remains were left so all could see them next morning.

If it had not been so hot and debilitating during the day I am sure we would have had all-night operations, but the heat had exhausted us all so the beds were welcome.

It is the first time in several years that AHARS has entered the 24-hour section of the John Moyle Field Day and the first time at all for most of the operators. However, despite the problems it was declared by one and all to have been a great weekend. ar



Graham May operating, Linden supervising and John VK5KMI logging.

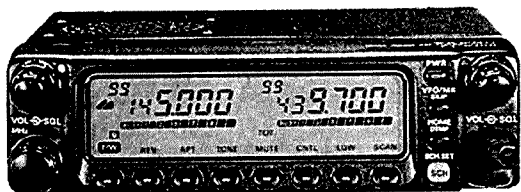
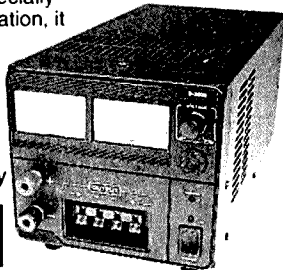
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D 3800

Great Value! \$299



FT-8100R 2m/70cm Mobile

The stunning Yaesu FT-8100R is a state-of-the-art 2m/70cm band mobile transceiver that combines high power and the industry's most versatile memory system with an excellent wideband receiver and solid construction. Its MIL-STD-810 shock vibration rating is your assurance of years of reliable operation. Other features include:

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- 198 memory channels for storage of your favourite frequencies
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- "Omni-glow" backlit screen showing frequency, memory and function
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D 3314

2 YEAR WARRANTY



\$899

Specifications

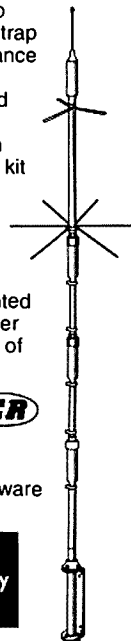
Frequency coverage: Transmit: 144 to 148MHz, 430 to 450MHz
 Receive: 110 to 550MHz, 750 to 1330MHz*
 *(800MHz cellular locked out)
 Transmit power: 2m - 50, 20 and 5W;
 70cm - 35, 20 and 5W
 Size: 140 x 40 x 152mm without knobs

Rugged HF 5-Band Trap Vertical Antenna

The rugged 5BTV incorporates Hustler's exclusive trap design (25mm solid fibreglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1kW (PEP) power handling. Wide-band coverage is provided on the 10, 15, 20, and 40m bands (SWR typically 1.15:1 at resonance, <2:1 SWR at band edges) with 80 kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can be installed without affecting operation of other bands. High strength aluminium and a 4mm (wall thickness) extra heavy-duty base section guarantee optimum mechanical stability. At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike other antenna designs, the 5BTV can be fed with any length of 50 ohm coax cable.

D 4920

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30m Resonator kit

Adds 30m coverage to the 5BTV and includes all hardware
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BONUS OFFER! Purchase the 30m resonator (D 4921) with 5BTV vertical, pay only half the price for the 30m resonator!

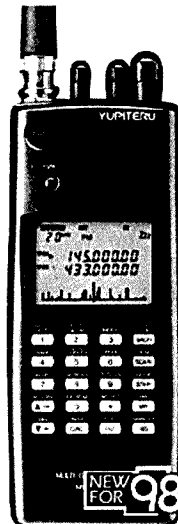
Yupiteru MVT-9000EU Deluxe Scanner

The Yupiteru MVT-9000EU is an amazing new Japanese handheld scanner that provides wide 531kHz to 2039MHz frequency coverage, a large and informative backlit LCD screen, and excellent sound quality. All-mode reception capabilities are provided, (FM, W-FM, AM and SSB modes) plus there are 18 selectable step rates between 50Hz and 125kHz to allow the best tuning choice for the signals being listened to. For easy storage of popular frequencies the MVT-9000EU provides 1000 memory channels (20 banks of 50 channels each) which can store frequency, frequency step, reception mode, as well as the Attenuator setting. Selected memory banks can be scanned to check on activity at a rate of up to 30 channels per second. Search operation is provided across 20 bands, with 500 Search Pass memories provided to "lock-out" unwanted frequencies for more efficient Search operation.

Other features include:

- Inbuilt ferrite rod for AM broadcast band reception
- A Band Scope function allows checking of adjacent channel activity, with two selectable Scope bandwidths. Using the Marker mode you can substitute the centre frequency of the Bandscope with a movable marker, so you can see the frequency and hear the audio of specific adjacent signals
- 10 Priority channels
- 50 Autowrite memories to store active frequencies during Search operation
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Complete with NiCad batteries, AC plugpack charger, car cigarette lighter lead, antenna, carry strap and belt-clip. D 2797



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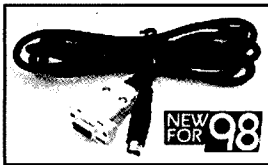
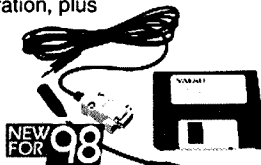
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ADMS-1D suits FT-10, 11R, 50R/RD, 51R, VX-1R D 3753

ADMS-2D suits FT-3000M, 8000R, 8500, 8100R D 3759

\$89⁹⁵ ea



FT-50RD 2m/70cm Handheld

The Yaesu FT-50RD is an amazingly compact 2m/70cm Amateur band handheld transceiver which provides MIL-STD 810 shock and vibration resistance, super wideband receiver coverage, simple menu settings for most functions, and compatibility with the optional Yaesu ADMS-1D software/interface package for PC programming of many functions.

Other features include:

- Tx 144-148MHz, 430 - 450MHz
- Rx 76-200, 300 - 540, 590 - 999MHz (cellular blocked)
- FT-12 keypad provides Digital Voice Recording, DTMF paging, CTCSS/DCS scanning, and CTCSS encode/decode
- 2m/70cm RF output: 2.5, 1.0, 0.1W standard, up to 5W with 9.6V battery or adaptor
- "Omni-glow" LCD screen for easier night-time viewing
- 112 memory channels with 4 character alpha-numeric naming
- High speed scanning, 12V DC socket, Digital Code Squelch
- Dual watch allows monitoring of sub-band activity
- Direct FM modulation for better audio quality

- 5 battery saving systems (includes Rx and Tx Save, and Auto Off)
- Rear panel clamshell battery pack
- Comes with FNB-40 slimline 6V 650mA/H Nicad battery pack, flexible 2m/70cm antenna and modified M-9626 AC plugpack adaptor for Nicad charging

D 3660

2 YEAR WARRANTY



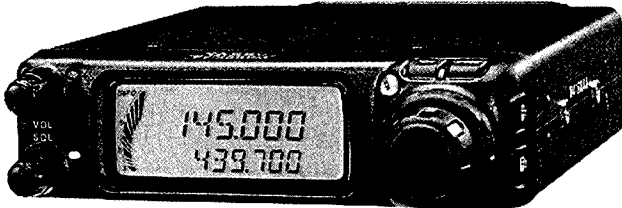
\$569

BONUS OFFER! Pay only half-price for a second Nicad pack when purchased with the FT-50RD. Limit one per customer. Applies to FNB-40, 41, 42 only.



FT-3000M 70W 2m mobile

An amazing new 2m mobile transceiver with up to 70W RF output. Rock solid with MIL-STD-810C shock and vibration resistance. The FT-3000M also has wide-band receiver coverage (110-180 and 300-520MHz), a dual band or dual in-band receiver facility and 1200/9600 baud Packet socket. Up front it has an impressive backlit alpha-numeric LCD screen. The FT-3000M has a total of 81 memories, as well as a Spectrum Scope mode that allows you to view activity above and below the current operating frequency, or among six programmed memories. A programming menu holds over 50 transceiver settings for easy "set and forget" access, and includes a scrolling text Help Guide. Twin fans provide optimum cooling during long transmissions for greater component reliability. The FT-3000M is supplied with an MH-42A6J hand microphone, DC power lead and instruction manual.



2 YEAR WARRANTY

Specifications

- Frequency range: Tx 144-148MHz, Rx 110-180, 300-520, 800-824, 849-869, 894-999MHz
- RF output: 70, 50, 25, 10W
- Sensitivity: 0.2uV (main Rx), 0.25uV (sub Rx)
- Dimensions: 140 x 40 x 180mm (WHD)
- D 3700

\$699

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■ Operating

The 41st Jamboree-on-the-Air (JOTA)

Harvey Lennon VK7KSM
National JOTA Co-ordinator
PO Box 97
South Hobart TAS 7004

It is time once again for JOTA (Jamboree-on-the Air), the largest annual event on the International Scouting calendar and one of the biggest events for amateur radio each year. The JOTA brings together amateur radio operators with members of the Scout Movement to enable Scouts and Guides around the world to communicate with each other by amateur radio.

How BIG?

In the latest World JOTA Report, the World JOTA Organiser, Richard Middlekoop PA3BAR reported over 510,400 Scouts and 56,100 Guides participated in the 40th JOTA, held in October 1997.

He also reported that almost 21,000 radio amateurs operating over 10,300 stations in some 110 countries made the 40th anniversary JOTA a huge success. Total youth participation around the world was up by about 65,000 or some 13 per cent on the previous year.

Now that is BIG!

Australia was in the top 10 countries participating in the 40th JOTA based on the number recorded as taking part as a proportion of registered members. Official reports indicate that 13,830 Australian Scouts, 6,469 Guides and 3,128 Scout and Guide Leaders took part in JOTA last year and we are hoping for even more in 1998!

Following is a brief introduction for the uninitiated and an update on important details for the 41st JOTA.

JOTA - When is it On and What is It?

JOTA is held on the third full weekend of October each year, this year on 17 to 18 October 1998. Officially it runs from 0000 hours local time on the Saturday to 2400 hours local on the Sunday, but many stations will operate from the Friday night.

JOTA can include the traditional modes such as Morse code and voice and more exotic modes like slow scan and packet. Regardless

of the method of communication, the central aim is that Guides and Scouts around the world have the opportunity to exchange views and ideas with other Guides and Scouts, to gain an appreciation of the cultures of other members of the Scouting and

Guiding Movements, and even to establish life-long friendships!

A secondary benefit is an introduction to amateur radio and electronics and technology, more generally. For many, myself included, JOTA provides an introduction to the wonderful hobby of amateur radio.

The nature of JOTA and types of JOTA activities around the world varies greatly, but here are a few ideas from last year for you to consider:

- Scouts in Switzerland operated from a giant tree cabin 20 metres above the ground;
- A handicapped radio amateur in Portugal made contacts by Braille;
- A Group of Rover Scouts in the Netherlands did a form of "progressive" JOTA, being dropped a long way from home, they visited every JOTA station on the return journey;
- In the United Kingdom, the radio team devised a Q-code domino game;
- A keen group in Victoria (Australia) sent a transceiver aloft by balloon power for the 40th JOTA.

The nature of JOTA activities is limited only by your imagination.

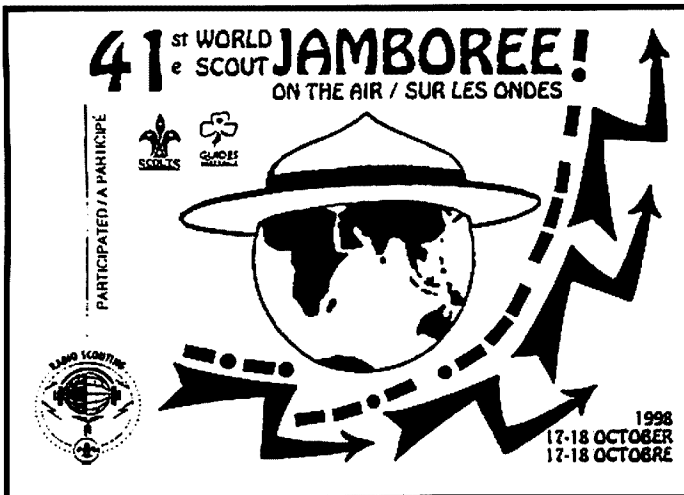
'Amateur Modes and Frequencies

JOTA is conducted in all authorised amateur radio modes on all authorised amateur radio frequencies. It is advisable for the amateur operator to listen or call on the JOTA call frequencies as listed in Table 1, or alternatively to listen or call just off those frequencies. As is usual practice, once a contact is established, the operator should move off the call frequencies to another available frequency.

National JOTA Address

As for last year the National JOTA Address (also referred to as the Opening Broadcast) will be pre-recorded and tapes will be distributed to stations around the country from which the broadcast will be transmitted simultaneously on a wide range of frequencies to maximise coverage.

The broadcast will be transmitted on Saturday, 17 October 1998 at 0300 UTC, that is one hour earlier than in recent years. Plans are currently under way to broadcast from Canberra using callsign



World Scout Calling Frequencies

Band	CWDX	Phone	VK Phone
80 metres	3.590 MHz	*3.740 MHz	3.590 MHz
40 metres	7.030 MHz	7.090 MHz	7.090 MHz
20 metres	14.070 MHz	14.290 MHz	14.190 MHz
17 metres	18.080 MHz	18.140 MHz	
15 metres	21.140 MHz	21.360 MHz	21.190 MHz
12 metres	24.910 MHz	24.960 MHz	
10 metres	28.190 MHz	28.990 MHz	28.590 MHz

(* - not legal in Australia)

More Information and Updates

More information on both JOTA and JOTI can be obtained from:

- the World Bureau's Internet site at www.scout.org/joti/ ;
- the Scout Australia site, www.scouts.asn.au ;
- JOTA Co-ordinators in each Branch through your local Scouts Australia office;
- local WIA broadcasts;
- National Scout Nets conducted by VK7SAN on the first and third Sundays of each month on 14.190 MHz at 0700 UTC and on 21.190 MHz at 0730 UTC;
- alternatively, the author directly by e-mail at harvey_lee@bigpond.com or on mobile 0417 582 587.

VK1BP on 7.090 MHz, 14.290 MHz and 21.190 MHz; from Perth using VK6SH on 14.190 (beaming east), VK6GGN on 14.125 MHz (beaming north); from Townsville using VK4SPP on 7.085 MHz; and from Hobart using VK7SAN on 3.590 MHz. Local two metre repeaters and WIA broadcast networks will also be transmitting the broadcast in some States.

The Opening Broadcast will once again comprise a series of short addresses including from the Chief Scout of Australia, the Honourable Sir William Deane, AC, KBE, Governor-General of Australia, and the Chief Guide of Australia, the Honourable Lady Deane.

JOTI

For the second year, JOTA will share the third weekend of October with the new International Scouting event, JOTI (Jamboree-on-the-Internet).

JOTI is seen as complimenting JOTA by also using available technology to enable Scouts and Guides around the world to communicate with each other, share information and ideas, make friends and have a great time!



The Ingham Group operating JOTA In 1997.

The success of JOTA is dependent on the contribution of amateur radio operators. In his address to the 40th JOTA, the Chief Scout of Australia expressed his thanks to amateur radio operators for their contribution to Scouting and Guiding through JOTA over the past 40 years.

Try to get involved and do amateur radio *and yourself* a favour this October!

ar



Mackay District active on JOTA last year.

WIA Call Book '99
The essential reference book for every radio amateur!

IARU News

Grant Willis VK5ZWI

Federal IARU Liaison Officer
10 Tora Court, Parkholme SA 5043
Tel: 0417 813 861
e-mail: gwillis@dove.net.au

Introduction

At the recent WIA Federal convention, I was nominated and duly elected to the position of IARU Liaison officer for the WIA Federal body. One of the things that I hope to do in this position is to keep the readership informed of the activities of the IARU, as well as enlightening you more as to the role of the IARU in the support of the Amateur and Amateur Satellite Services on an international level.

What is the International Amateur Radio Union (IARU)?

The Amateur Radio Service needs representation at international levels to support its interests in retaining spectrum, plus maintaining and improving licence privileges. Amateur Radio also needs mutual support for activities within the service, to help harmonise activities between different countries. To fill these roles, the International Amateur Radio Union was created many years ago.

The IARU consists of almost all of the national amateur radio societies around the world that have the principal liaison role with

their national regulatory authorities. Further, the IARU is also divided into three regions, which are aligned with the International Telecommunications Union (ITU) region definitions. The WIA is Australia's member IARU society, as in Australia it is the largest organisation in this country charged with representing radio amateurs to the ACA and government authorities. The WIA is also one of the co-founders of IARU Region 3 covering Asia and the Pacific.

What does the IARU Do?

The IARU peak body is the Administrative Council (AC), which is responsible for co-ordinating and defining policies for all member societies to then represent to their respective government administrations.

The IARU-AC receives its input from all member IARU societies and co-ordinates the discussions on the many issues at hand. Then, based on recommendations made at the yearly IARU Region conferences, the AC formulates policies for member societies to take back and promote to their governments.

As well as formulating policies to be put to governments, the IARU is involved in promoting amateur radio, reviewing education issues, promoting amateur activity and assisting, where possible, the development of amateur radio in the many countries of the world. International activities like Amateur Radio Direction Finding are being co-ordinated by IARU, as is the international HF Beacon project (of which VK6RBP is part), amateur satellite international frequency co-ordination, and many others.

How Does IARU Represent Us?

To get an international amateur radio issue to be ratified by the ITU (the international body that governs the use of the radio spectrum) requires the common amateur message to be expressed by a majority of government

authorities present at the World Radio Conferences (WRC, formerly WARC), held every two years or so.

The national societies are not directly admitted to the ITU WRCs. However, they can send delegates along if they are part of the government delegation. In Australia, the WIA sends (and funds) a WIA delegate to attend the WRC as part of the ACA delegation to the ITU WRC, usually held in Geneva, Switzerland.

Through the prior co-ordination of amateur ideas through the IARU, amateur operators and societies admitted to the government delegations can lobby common amateur positions at an international level. This is mandatory when issues such as the international amateur radio regulations are being discussed, and the amateur service as a whole can be affected.

It is the only way that amateur radio can present a common view to the ITU of what the amateur service as a whole would like to see on such an issue. Another similar issue is amateur spectrum issues, where common frequency bands for all amateurs globally are being sought (for example the 7 MHz band). Diagram 1 makes the chain of communications a little clearer.

In the next *IARU News* I will report on some of the recent activities of the IARU, including outcomes from the Beijing 1997 IARU Region 3 conference which the WIA attended, and some current international issues affecting amateur radio.

If you would like more information about IARU, or have an international issue that you would like more information on, or believe the WIA should be doing something about, please feel free to e-mail me or write to me. The IARU work that the WIA undertakes is aimed at improving amateur radio in this country, and your opinions are valuable.

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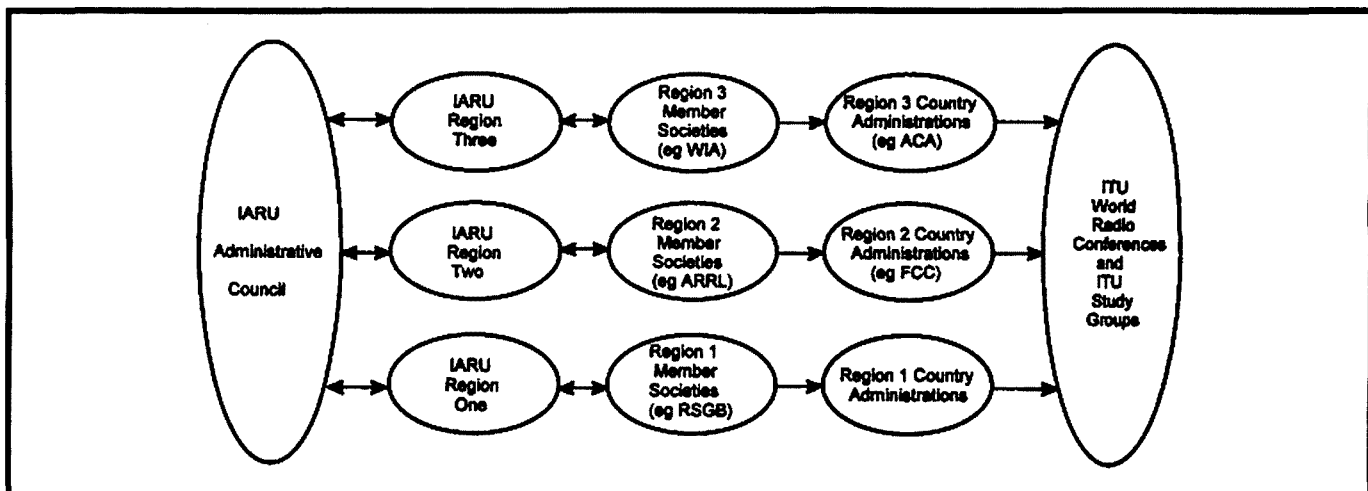


Diagram 1 - The International Amateur Radio and Amateur Satellite Service representation process.

ALARA

Christine Taylor VK5CTY

ALARA Publicity Officer

16 Fairmont Avenue, Black Forest SA 5035

Packet: VK5CTY@VK5TTY

ALARA Contest

Don't forget, everyone, November is ALARA Contest month. I am sure all the YLs will remember but we need you OMs as well, and let us have lots of clubs joining in, too.

It is a very friendly Contest! We have time to chat if you have, and the rules have changed this year to allow us to have more than one contact with the same station on the same band as long as we have at least an hour between the contacts. With the limited time the bands are open, some years, this could make quite a difference.

Please join in and PLEASE send in your logs. Make our Contest Manager, Marilyn VK3DMS, do some work this year. All the details of the Contest were listed side-by-side with this column last month. Just warm your rigs up for 14 November at 0001 UTC.

Another SK

Our Secretary received an e-mail message to tell us that Kay G0KTC, Editor of the BYLARA Magazine, became an SK on 22 July.

She will be sadly missed and not easy to replace as Editor. I was personally shocked by this news as I had several conversations (by phone line not radio as we had no HF gear with us) with Kaye while I was in the UK last year. I am even more sorry I did not have the chance to meet her face to face.

Travellers' Tales

Another postcard from Sally VK4SHE tells us she has enjoyed wandering around the ruins in Greece but was back in the UK again. A cousin took Sally and Rex to Brighton to tour the amazing Brighton Pavilion.

Sally remarked on the magnificent chandelier. I remember the enormously long banquet table set with gold plates and cutlery and, on another note entirely, I remember seeing one of the first indoor toilets or water closets, installed for Queen Victoria. If you ever have a chance to visit the Brighton Pavilion, don't miss it.

The image of the exterior Turkish splendour and the Chinese treasures of the interior will stay with you for ever. A pleasure dome to beat all pleasure domes.

By contrast, the postcard from Meg VK5AOV from Broome said the caravan was just 20 metres from the sea at the time of writing but when the tide was out the water was nearly a kilometre away! It is unimaginable. I guess we all have to go there to see it for ourselves.

Helene VK7HD and Peter are moving around the northern parts of VK4 and Marlene VK3WQ and Jim are in Hervey Bay. So, if you hear any of these visitors to your area, say "Hello" to them.

Why not listen to the Travellers' Net from time to time to see who is where; it is very interesting.

Historical Items

Two very interesting pieces of paper have come my way recently, both concerning early YLs.

The first one refers to a YL in Britain back in 1927. In the log book belonging to a Miss Barbara Dunn, who received her licence on 1 Sept 1927 as 6YL, later G6YL, are recorded many interesting and historic contacts and 'stations heard'. Barbara wasn't the first YL licensee in the UK (that honour goes to a Mrs C E Ingham (1XL), granted in 1913), but Barbara has certainly left us some amazing records. As an SWL she heard a special program sent out from the Marconi Drummondville Beam Station in Quebec, to commemorate the Diamond Jubilee of their Confederation on 2 July 1927. She made contacts with yachts and passenger ships, and often monitored radio signals between aircraft and ground stations.

For Australians, the most interesting report Barbara recorded (her reports are verbatim and cover both sides of the conversations so she was obviously as proficient at shorthand as she was at CW) were those between Kingsford Smith in the 'Southern Cross' on the flight from Ireland to New York in June 1930 and various ships at sea and land stations. Her 30 hour vigil at the radio on this occasion was written up in the *Daily Express*; it certainly was a remarkable effort.

Barbara's first VK contacts were with a maritime station. She had a series of contacts with G5WQ in November/December 1931, on the Blue Funnel ship "Ascanius" between Las Palmas and Australia. One of these was in VK6, off Cape Leeuwin; another was in VK5 as the ship crossed the Great Australian Bight.

She continued to operate for 50 years. By 1930, when Barbara became the first YL to win an RSGB Trophy, she had made over 2000 contacts, and before she shut her key

down she had made over 15,000 QSOs all on CW.

All the information I used about Barbara was from an article in a radio magazine printed back in 1980. I have far less information about the next early YL but would love to have more. So, if the following small piece triggers a memory for you, please put pen to paper immediately before it is forgotten again.

Dave VK6ATE sent this next piece to Bev VK6DE some time ago about 'Ladies in Amateur Radio (Western Australian style)' which mentions an application was received, in April 1914, from a Mrs Pym of Rotttnest Island to become a Correspondence Member of the WA Radio Club.

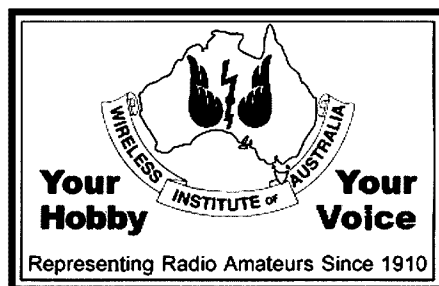
Was she the first ever VK YL? By October 1923 the callsign 6AW was held by an L Pym of Rotttnest Island but there the mystery remains!

From the rest of the reference it would appear that there was a Lyle Pym who held a licence. This may be the lady's husband but, if so, why did she apply in her own name to become a member-at-a-distance?.

Also in the same October 1923 list appears a Miss C Stevens of the District High School of Bunbury. She seems to have held a "Receive Only" licence 6BF, which is odd in itself as the first broadcast station 6WF did not come on the air until June 1924. We don't know if Miss Stevens ever held a transmitting licence, or whether she was a pupil or a teacher.

In the Minutes of the WA Radio Club there are two other mysterious references, one an inquiry from a Miss A (Gypsy) Jones asking how to join the club, and there is a reference to "another application" from a Miss Faraday. But no more references to any of these ladies have been found.

The first complete record we have is that for Miss Ruth Longley who became the first holder of VK6YL, possibly early in 1936. Ruth is listed as Mrs Harris in the 1946 Call Book but was not listed at all in the 1947 Call Book. By then there were several YL Operators in VK6 of whom the best known and most active was probably Mrs Bobby Hill VK6MH. If anyone can cast any light on any of these mysteries, ALARA would be very grateful. ar



Pounding Brass

Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

Education Notes

Brenda M Edmonds VK3KT
Federal Education Co-ordinator
PO Box 445, Blackburn VIC 3130

The intended article on "Using Morse in a Mobile Environment" will appear in a later issue. Unfortunately, my photographs didn't turn out as well as I had hoped.

This month's column will include a mixed basket of items collected from around the world.

Morsum Magnificat

Morsum Magnificat, the international Morse magazine from the UK, has a new editor/publisher, Zyg Nilski G3OKD. Zyg will take over from Geoff G3GSR and Tony G4FAI at the end of this year.

This is great news for Morse enthusiasts around the world as it would have been a great loss to see MM close its doors after many years of dedicated work. Well done, Zyg. You have a hard act to follow.

Any related information can be sent to: Zyg Nilski G3OKD, The Poplars, Wistanswick, Market Drayton, Shropshire, TF9 2BA England.

High Speed Telegraphy Championships

The HST (High Speed Telegraphy) Championships 1999 will take place in Pordenone, Italy starting on 28 April and finishing on 2 May 1999.

During the event other activities will take place, including excursions to Venice and the Electronic and Ham Radio Fair. Further information can be obtained from HST Co-ordinator, Lazlo Weisz HA3NU, PO Box 169, H-7100, Szekszard, Hungary.

Morse Teaching Program

The "MILL", a Morse teaching program by Jim Fanier W4FOK, is now available as freeware. Anyone with Internet access can download this fine program from Jim's Web site at <http://www.net-magic.net/users/w4fok/> and register by e-mail.

The program contains international and American Morse, along with other related items highly recommended.

As was noted in the last issue of *Amateur Radio*, new Regulations examination papers have now been put into use. As these contain questions from the new question bank which have not been used before, many invigilators will feel that the papers they are now receiving are harder than the previous ones.

Please be assured that care was taken to maintain the standards set previously. New questions always seem harder than ones which we have seen many times. As you see more of them, I am sure you will be pleased with the standard.

Of course, if anyone finds a fault that has slipped through both the Exam Committee and the ACA, please let me know.

The Examination Committee intends to begin to draw the Theory papers from the new question banks shortly. You will be advised when this occurs. Again, the papers will appear harder as new questions are used.

I often receive letters from newcomers to the hobby asking about classes or study needs. Some I can answer directly, others I pass to

more appropriate respondents. I was disturbed recently to hear from a student that he had attended a local club meeting in hope of mixing with and talking to older amateurs, and had found the atmosphere quite unwelcoming.

I appeal to all clubs and gatherings, hamfests, fox-hunts and even on-air nets to be aware of the newcomers, make them welcome, offer them the courtesy of listening to them, and answer questions or pass them to someone else who can answer. The impression made on a new recruit may well be the factor that decides if he/she will continue in the hobby, or perhaps bring others in.

Another letter recently received was from a student in Papua New Guinea, seeking to meet amateur radio operators as pen friends, to discuss equipment, resources and radio theory while he is studying for his licence. If any readers would like to make him welcome, his address is: Mr Ricky Nadu, PO Box 649, Popondetta, Northern Province, Papua New Guinea. I am sure he will welcome any responses.

Our membership has dropped alarmingly over recent years. We need to put aside the whinges, complaints and politics in order to sell the WIA to current members as well as to newcomers.

Do YOU know what your Division and/or the WIA Federal body do in your interests?

In general, the strongest critics of the WIA are non-members. Can you refute their criticisms and demonstrate the need for a coherent approach and support for the WIA? The WIA speaks for the Australian amateurs at local, national and international level. To do so, it requires input and support from all amateurs.

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New Books

Two new books about telegraphy are now on the market.

Morse Code; Breaking the Barrier by David Finely N1IRZ is a book based on the research by Ludwig Koch, a German psychologist, who is believed to have trained students to copy 12 wpm in as little as 12 hours. Other chapters include, Making Your First QSO, Sending With Keyers, Straight Keys, and Bugs, plus other Morse related subjects.

The book (MFJ-3400) is available for \$US14.95 plus shipping from MFJ Enterprises Inc, PO Box 494, Mississippi, MS 39762, USA. The author's Web site can be found at <http://www.sdc.org/finely>. I hope to receive my copy soon.

The other book which should interest telegraph collectors is by the noted collector

Tom Perera W1TP. The book is entitled *Perera's Telegraph Collectors Guide*.

The book identifies keys, sounders, relays and other Morse related instruments along with 250 pictures and descriptions. The book also includes a current value guide to keys, etc. A must for every telegraph instrument collector.

The book is in soft cover, 5.5 x 8.5 inches, contains 80 pages and costs \$US10.00 plus \$US5.00 airmail. This book can be purchased from: Artifax Books, Box 88, Maynard MA 01754, USA.

To Come

Coming articles include Gravity and Leclanche cells as used in overland telegraphy, galvanometers, and electrical tests required in practical telegraphy.

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Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaco Street, Mentone VIC 3194
E-mail: vk3did@hotmail.com

Contest Calendar October - December 1998

Oct	3/4	VK/ZL/Oceania DX Contest (Phone)	(Aug 98)
Oct	4	RSGB 21/28 MHz Contest (Phone)	(Sep 98)
Oct	10/11	VK/ZL/Oceania DX Contest (CW)	(Aug 98)
Oct	17	Asia-Pacific Sprint (CW)	(Jan 98)
Oct	17/18	JARTS WW RTTY Contest	
Oct	17/18	Worked All Germany (Mixed)	(Sep 98)
Oct	18	RSGB 21/28 MHz Contest (CW)	(Sep 98)
Oct	24/25	CQ WW DX Contest (Phone)	(Sep 98)
Nov	1-7	HA QRP Contest	(Oct 98)
Nov	7/8	WAE RTTY DX Contest	(Jul 98)
Nov	7/8	OK DX CW Contest	
Nov	14	ALARA Contest (CW/Phone)	(Sep 98)
Nov	14/15	IARU Region 1 160 m Contest	
Nov	14/15	All Austria CW Contest	
Nov	21/22	CW WW DX CW Contest	
Dec	5/6	ARRL 160 m Contest	
Dec	12/13	ARRL 10 m Contest	
Dec	27 to		
Jan	25	Ross Hull VHF/UHF Contest	
Dec	31	ARRL Straight Key Night	

An Apology

I acknowledge receipt of advice that in the VHF-UHF Field Day Results (*Amateur Radio* June 1998) an error was made in a callsign. In Section B - Portable, single operator, 6 hours, a wrong callsign was printed as the winner. The correct winner is Steve Hutcheon VK4ZSH and I express my sincere apology to him for my typing error and for the distress caused to him by this.

Thanks this month to G3PJT, VK3KWA, VK4EMM, VK4NEF, OH2KI, and *RadCom*.

Results of Pacific 160 Metres Contest 1998

(posn\call\score)

CW	Phone
1 VK6VZ 952 *	1 VK5CRS 1554 *
2 ZL2SQ 946 *	2 VK3EW 1245 *
3 VK3IO 792 *	3 VK3IO 940
4 VK3APN 264	4 VK3ZL 658
5 VK2AYD 208 *	5 ZL1BRY 639 *
6 W8JI 180 *	6 ZL2AS 480 *
7 VK3DID 126	7 ZL1BWQ 344
8 VE7BS 100 *	8 ZL3TX 196 *
9 VK4ICU 72 *	9 VE7BS 60 *
10 YC0LOW 45 *	10 VK3APN 24
11 VK3ZL 44	11 VK3DID 21
12 W7LR 40 *	12 VK6VZ 16
13 K6SE 10	
14 N6RO 5	

* = certificate

A total of 26 logs was received this year, nine of them by e-mail. Some scores had to be altered upwards, as several logs forgot to add the extra multiplier for additional DXCC countries. Activity was brisk at the beginning in CW mode, with SSB emerging later in the day. Most of the ZL/VK activity was up to midnight local time. Many thanks to all those who took part. See you next year.

Results of John Moyle Field Day 1998

From Eric Fittock VK4NEF

(Call\cat\mode\band\score)

Portable, Six Hour

VK2BOR	Mult	All	All	264 *
VK3CMZ	Mult	All	All	118 *

VK7OTC	Mult	All	HF	122 *	VK3IO	Sngl	All	All	105																																						
VK3PP	Sngl	All	HF	60 *	VK1WJ/2	Sngl	All	All	88																																						
VK4EMM	Sngl	CW	HF	466 #*	VK8AV	Sngl	All	HF	75																																						
VK1PK	Sngl	CW	HF	26 *	VK2TZ	Sngl	All	VHF	69																																						
VK5AJS	Sngl	Phone	HF	192 *	VK4MOJ	Sngl	All	HF	59																																						
VK5UE	Sngl	Phone	HF	104 *	VK3ALD	Sngl	All	HF	42																																						
VK1PK	Sngl	Phone	HF	60 *	Check log with thanks: VK4APZ																																										
VK4MC	Sngl	Phone	HF	14	*Certificate #President's Cup																																										
VK3KAI	Sngl	Phone	VHF	742 *	47 logs received, 11 by e-mail. Multi-op scores well up this year, but several bad mistakes in logs, eg times in local, wrong multipliers, wrong scoring on VHF and no serial numbers. Please be most careful in future. Congratulations to VKs 4EMM, 1FF, 3FRC, 3ER, 4WIS and ZL2AWH																																										
VK2ANK	Sngl	Phone	VHF	148 *																																											
VK5AIM	Sngl	Phone	VHF	138																																											
Portable, 24 Hour																																															
VK3FRC	Mult	All	All	15672 *																																											
VK3ER	Mult	All	All	10212 *																																											
VK4WIS	Mult	All	All	6088 *																																											
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Full list available on Internet or from me.

HA-QRP 80 m Contest (CW)

0000z 1 November to 2400z 7 November

This international contest takes place each year during the first seven days of November and is open only to stations running a maximum of 10 W input power. Use 3560-3600 kHz, CW only.

Call "CQ TEST QRP" and exchange RST, QTH and names. Score one point per QSO with own country and two points per QSO with others. Stations can be contacted only once during the contest for points credit. Final score equals QSO points times DXCC countries worked. Logs must show date, time, callsign, reports, QTH and name of station worked.

Summary sheet must include first name and QTH sent during the contest, Tx input power and Tx output device.

Send logs postmarked by 20 November, to: Radiotechnika Szerkesztosege, Budapest, Pf 603, H-1374, Hungary. All entrants will receive participatory certificates and outstanding scorers will receive a free subscription to *Radiotechnika* magazine for one year.

High Speed Club CW Contest

0900z - 1100z and 1500z - 1700z,

Sunday 1 November

This contest runs on the first Sunday of November each year, and is sponsored by the High Speed CW Club of Germany.

Use 80 - 10 m (no WARC). Exchange RST plus serial number. HSC members will send their HSC membership number. Score one point per QSO with own continent and three per QSO with other continents. The multiplier is the total number of DXCC countries worked separately on each band. Note that stations can be worked once per band per period.

Closing date for logs is 11 December 1998. Send logs to: Frank Steinke DL8WAA, Trachenbergerstrasse 49, D-01129 Dresden, Germany.

OK DX CW Contest

7/8 November, 1200z Sat - 1200z Sun

This CW contest runs in the second full weekend of November each year. Bands are 160 - 10 m. Categories are: single operator, single and multi-band; multi-operator, single and multi-Tx; QRP, single and multi-band (max 5 W o/p); SWL. Single operator stations operate max 20 hours, with minimum one hour rest periods. Multi-band stations apply "10 minute band change rule" (multi-Tx stations are exempt from this rule).

Send RST plus serial number; OK stations will send RST plus three-letter district code. DX (VK) stations score 10 points per OK/OL/OM QSO, and one point per QSO with another country. Multipliers are the sum of

DXCC countries and OK districts on each band. Final score is QSO points (all bands) times multiplier from all bands.

Note rest periods in log and use a separate log for each band. Cross-check sheets are required for 200+ QSOs. Logs can also be submitted in ASCII on DOS disc. Entries should be postmarked by 14 December and sent to: CSRK, Box 69, 113 27 Praha 1, Czech Republic.

IARU Region 1 160 m CW Contest

14/15 November, 1400z Sat - 0800z Sun

Scheduled for the third full weekend of November each year, everyone can work everyone, including stations in their own country, in CW mode.

Exchange RST + two- or three-letter district code (for VK = state or territory). Score one point per QSO and multiply by the number of different location codes worked PLUS the number of DXCC/WAE countries worked.

Send your log to: ARI Contest Manager I2UIY, PO Box 14, I-27043 Broni (PV), Italy, postmarked by 30 December. SWL entries also welcome.

Spring VHF-UHF Field Day

John Martin VK3KWA, Contest Manager

Some months ago Rod Collman VK2TWR suggested that there should be a VHF-UHF Field Day in the springtime. There seems to be plenty of interest in the idea, certainly enough to justify running it as a trial. If it is a success, it could become a regular event in the contest calendar.

So, this year, there will be a Spring VHF-UHF Field Day on the weekend of November 14 and 15. It will be an ideal time to dust off that equipment, blow the earwigs out of your portable antennas, and spend a nice warm spring day on a hilltop.

The rules will be much the same as for the regular VHF-UHF Field Day which is held in January. Any comments on the rules or timing of this new Field Day would be most welcome.

Duration

VK6 only: 0400 UTC Saturday, 14 November to 0400 UTC Sunday, 15 November 1998. All other call areas: 0200 UTC Saturday to 0200 UTC Sunday.

Sections and Awards

A: Portable station, single operator, 24 hours.

B: Portable station, single operator, any 6 consecutive hours.

C: Portable station, multiple operator, 24 hours.

D: Home station, 24 hours.

General Rules

Operation may be from any location, or from more than one location. You may work

stations within your own locator square. Repeater, satellite and cross-band contacts are not allowed. A station is portable only if its equipment, including antennas, is transported to a location other than the normal home location of its operator.

No contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for any contest activity. Suggested procedure is to call on .150 on each band, and QSY up.

One callsign per station. If two operators set up a joint station, they may enter as a multi-operator station under a single callsign, or as separate single operator stations. Stations with more than two operators must enter section C.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator.

Repeat Contacts

Stations may be worked again on each band after three hours. If the station is moved to a new locator square, repeat contacts may be made immediately. If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

Scoring

For each band, score 10 points for each square in which your station operates, plus 10 points for each locator square worked, plus one point per contact. Multiply the total by the band multiplier as follows: 6 m x 1; 2 m x 4; 70 cm x 7; 23 cm x 10; 13 cm x 13; and Higher x 16. Then total the scores for all bands.

Sample Scoring Table

Band	QSO pts	Locator pts	Multiplier	Total
6 m	120	+ 280	x 4	= 1600
2 m	60	+ 140	x 7	= 1400
etc				
Overall Total				3000

Logs

For each contact: UTC time, frequency, station worked, serial numbers and locator numbers exchanged, points claimed.

The front sheet should contain names and callsigns of all operators; postal address; station location and Maidenhead locator; the section entered; a scoring table; and a signed declaration that the Contest Manager's decision will be accepted as final.

Entries

Please post logs to the Manager, Spring VHF-UHF Field Day, PO Box 2175, Caulfield Junction, VIC 3161. Logs must be received by Tuesday, 1 December, 1998. Early logs would be appreciated.

ar

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Direct QSLing, it appears, is a problem for many DXers, especially for the beginners. Lecture and study courses prepare the beginner to pass the examination to obtain a licence, but I wonder whether the candidates are conversant with the practical operation of an amateur radio station. Whether they have the experience of the "hands on approach" of amateur radio, or whether they are knowledgeable in QSLing, especially how to QSL direct.

QSLing via the Bureau system seems to be an accepted fact (despite it being a very, very slow process), but one has to be mindful that at least fifty DXCC countries do not have a QSL Bureau at all! A card casually sent via the Bureau system to one of those countries will never reach its destination.

Many countries, like Egypt, France, Germany, Japan, Monaco, Morocco and Portugal restrict forwarding of QSL cards to members only. On the other hand many amateurs, including DXers, are not members of the Bureau system or their national amateur association.

The golden rule in direct QSLing is to follow the instructions of the DX station. Even in a pile up, if you listen long enough the DX station will eventually give QSLing instructions. If the instruction is to send the card to a QSL manager, do that. If the card is to be sent direct to the home call, do that also. Never assume that the QSL manager is a member of the bureau.

To be successful at direct QSLing you must follow certain rules. You have to realise that the DX station does not really need your card. It is you, the beginner DXer, who wants his card. You want the card, and expect the DX station to pay for the reply envelope and postage? It does not work that way!

You might be one of the many hundreds, or even thousands, of amateurs who want that DX card. Just add up the costs! Your card is required by the DX station to supply the information about your contact, to assist the DX station to find you in their log, and to issue a confirming card.

The cost of getting a card from the DX station is borne by you. When sending a card to the DX station, please include a self addressed air-mail envelope with adequate compensation for the reply. This problem is solved by enclosing one or more IRCs (International Reply Coupons) which can be purchased from your post office.

Make sure that the left side of the Coupon is date-stamped by the issuing post office. Generally one IRC will be adequate for an air mail reply, but certain countries require more than one IRC. Some other countries, who are not members of the International Postal Union, do not accept IRCs at all.

The other method of paying for the return postage is to send "green stamps", that is US one dollar bills (purchased from banks or money exchanges). Be warned, however. Some countries have currency restrictions and individual citizens are not permitted to receive foreign currency by mail.

On the other hand, due to exchange rate fluctuations, one green stamp might not be sufficient to purchase a reply stamp to Australia. A good example is Germany where it costs two US dollars to buy a stamp on a letter to be sent to Australia.

As you can see there are problems, even with direct QSLing, not to mention the inconvenience of the "disappearance" of foreign letters in the mailing system of underdeveloped countries or in countries which are undergoing a continuing financial crisis and rapid inflation or devaluation.

The matter of direct QSLing is much simpler if the QSL Manager of your DX station is a local one residing in Australia. You have to put only a 45c stamp on the reply envelope. Some of you apparently ignore even this simple courtesy.

An Australian DXer, who recently operated in the Pacific, received hundreds of card requests, including quite a number of cards from Australian amateurs. More than half of the Australians sent only the card, nothing else. I do know that our DXer replied to all cards where a self-addressed stamped reply envelope was included.

Bhutan A5

Jim Smith VK9NS, who has visited Bhutan previously, issued a press release in the name of HIDXA on 9 August indicating a possible activity from Bhutan late in October.

Here are the vital parts of the release. "Having been in contact with Bhutan on several occasions in recent weeks, I am making plans to return to A5 Bhutan in the near future.

Depending on availability of funds, either one or two weeks will be spent in Bhutan. Due to previous commitments the earliest time-frame for my visit is the last two weeks of October."

These are the major points of Jim's plan:

1. Return to Bhutan to gather together the equipment including transceivers, linear amplifier, RTTY gear, all cables, microphones, and the beam donated by INDEXA shipped to Bhutan by HIDXA, etc.

2. Check the serviceability, assess condition of all equipment, and familiarise MOC (Ministry of Communications) staff with its condition.

3. In Bhutan, legislation is now being processed in the form of a Telecom Act, which will permit introduction of amateur radio as a hobby. Finalise an assessment and establish further needs to assist the Kingdom of Bhutan to make its entry into the world of Amateur Radio.



The participants in the Laos - XW DXpedition. (l to r) Frank AH0W, Eric SM0AGD, John SM0EJZ, Yuki (XYL of JH1AJT), "Zorro" JH1AJT.

4. To assist a very well known Bhutanese to set up an amateur radio station so that activity can commence as soon as legislation is in place. It is unreasonable to expect the first official Bhutanese activity to be carried out by a DXpedition completely disregarding the local nationals. The participation by Bhutanese operators is very important on such an occasion.

5. Discussions with MOC staff about the number of operators on start-up, including foreign and national participation.

Jim has been promised that a visa will be issued within seven days of his application being received in Bhutan. The bad news is that costs in Bhutan are high and during October are \$US240 per day. This cost has to be covered. Initially, seven days would be good, but 10 or 14 days would be better, giving much more flexibility. In addition, there is the cost of travel to and from Bhutan, etc.

Jim appealed to individual DXers, Clubs, Groups and Associations to make or pledge donations and to provide written support for the proposed Bhutan activity. The deadline for final decision making was 20 September.

If you need Bhutan, please send your donation, and encouraging note (Australian cheques are accepted), marked Bhutan Project, to Jim Smith VK9NS, PO Box 90, Norfolk Island 2899.

Temotu Province - H40 - Added to DXCC List

The ARRL Awards Committee, in a press release dated 17 August, announced that it has accepted a recommendation of the ARRL DX Advisory Committee to add the Temotu Province of the Solomon Islands to the

DXCC list. The addition will be effective with contacts made as from 2359 UTC on 31 March 1998 and after.

The DXCC Desk will accept QSL cards for Temotu Province (H40) beginning 1 October 1998. QSL cards received before that time will be returned without action.

Temotu Province includes the Santa Cruz, Reef, Duff and Vanikolo Island groups. They are located more than 350 kilometres from the main group of the Solomon Islands.

The FO0 Austral and Marquesas Islands are still under review by the DXAC. They are waiting on more detailed maps of the area before making a final recommendation on those entities.

Amsterdam Islands - FT5Z

The planning for the FT5ZH DXpedition to Amsterdam Islands between 28 November and 24 December is now at an advanced stage. Mehdi F5PFP and Eric F5SIH will be active with two stations equipped with FT920s, kW amplifiers, 3 element 20 m Yagis, 4 element tri-band 10, 15 and 20 m beams, and a Titanex vertical for 40, 80 and 160 m.

They are still looking for a WARC antenna. QSL via F6KDF.

Pratas Island - BV9P

During the recent New Orleans International DX Convention, Paul BV4FH, who was a member of the last trip to Pratas Island, explained how difficult it is to obtain proper authorisation for returning to this politically sensitive island.

Paul asked those present, and other DXers, to indicate their need for Pratas Island to be activated. He hopes to present the e-mail

messages as hard copies in a package to show evidence of the needs and desires of the DX community to the governing authorities.

He feels that good representation will be the culminating ingredient for the approval so that a 10 member team can visit the island as soon as possible. Paul's e-mail address is bv4fh@ms.hinet.net.

Rodriguez Islands - 3B9

Frank Smith AH0W announced at the New Orleans International DX Convention that there will be a major multi-multi activity from Rodriguez Islands, probably in January 1999.

It will be conducted by an international team of operators from the US, Japan and Europe. They plan to use four HF stations from two locations separated by about five miles to minimise interference.

Yemen - 7O

The Yemeni Minister of Communication, Mr Ahmed Al-Ri, recently visited the Royal Omani Amateur Radio Society and had a series of meetings with the officials to help establish amateur radio in Yemen and a possible DXpedition from Socotra Island (12° 30' N and 54° 00' E). It was reported that the minister is keen on amateur radio (including CW) and was himself a radio amateur some 40 years ago.

It appears that the island is about 370 km from its nearest parent country (Yemen) and it belongs to another continent, namely Africa. The island is avoided by mariners because piracy is abundant in that area.

"It could become a new DXCC entity," said Tony A45ZN, commenting on the news. However, we should keep in mind what the Deputy Minister of Communication of Yemen said to Zoli HA5PP in June this year (see August 1998 *Amateur Radio*).

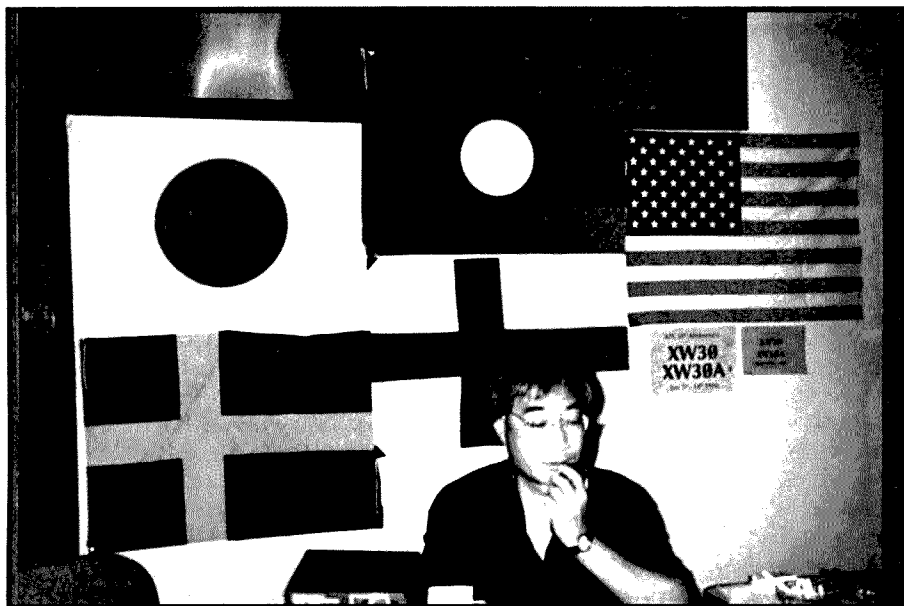
Future DX Activity

* **Belgium - ON.** Special event station ON4CLM will be on the air from 30 October until 7 November 1998 celebrating the liberation of the Belgian town of Knokke by the Canadian Forces in 1944. QSL via the Bureau or direct to PO Box 110, B-8300, Knokke-Heist, Belgium.

* **Maldives - 8Q.** A sixteen member German team will be active from 19 October to 4 November during the CQ WW SSB DX Contest. The OMs will use the call 8Q7IO and the (X)YLs will use the call 8Q7IQ. QSL via DL7VRO.

* **United Arab Emirates - A6.** Daniel F6ARU (who operated from Jordan as JY9RU) will be active from here for one year.

* **Pacific Trip.** Roger KF8OY will be operating as ZK10OY from South Cook, as YJ1OY from Vanuatu, as S79OY from the Seychelles, and from the Philippines and



Zorro JH1AJT at the microphone of XW30, XW30A and XW4A.

Singapore from 22 October to 9 November. QSL direct only via KF8OY.

* **India - VU3.** Gerard F6EGX will be active from India as VU3AGX.

* **Vietnam - 3W.** Peter 3W6EA is restricted to operation only on the following frequencies: 14160, 14260 and 21260 kHz. He was heard around 1500-1630 UTC. QSL goes to PO Box 121, Ho Chi Minh City, Vietnam.

* **Kenya - 5Z4.** Jacky, formerly F2CW, now a resident Kiwi as ZL3CW, will be active from Kenya 5Z4, from Uganda 5X, and from Eritrea E3 in the next four months. QSL to home call, ZL3CW, Jacky Calvo, PO Box 539, Pukekohe 1800, New Zealand.

* **The Gambia - C56.** Six members of the Bavarian Contest Club will be very active in the forthcoming CQ WW SSB Contest from 14 October. All bands CW and SSB.

* **Martinique - FM.** Nuria and Josep will be active as FM/EA3ACK/p and FM/EA3BT/p on SSB, RTTY and some CW, on 80-10 m, including the WARC bands, from 20 to 26 October. All QSLs go via EA3BT.

* **Guam - KH2.** Gus K4SXT/KH2 and Dave N2NL/KH2 are now both active on 160 metres. QSL to N2NL/KH2 via W2YC.

* **VK/ZL/Oceania Contest.** The SSB part of this contest will be on 3/4 October and the CW section will be on 10/11 October. Seven stations from Guam and six stations from Saipan will take part. As a DXer you should take part, not only to show solidarity with the fraternity, but this is the occasion where you might be able to pick up a few rare countries from the opposite side of the globe.

* **Mali - TZ.** Bob K4RB has just received his TZ6DX licence. He will be active from 40 to 10 metres, including the WARC bands. He is active usually at his local evening time. QSL to the old callsign, WA4FVT.

* **South Africa - ZS.** Etienne ZS6Y will be active during the October CQ WW contest with the ZS9F prefix.

Interesting QSOs and QSL Information

* **ZS80NRM - 14260 - SSB - 0555 - July.** QSL via ZS6Y, E Swart, PO Box 12, Strubens Valley, 1735 South Africa.

* **ZC4ESB - Mac - 14243 - SSB - 0533 - Aug.** QSL via Box 96, Larnaca, Cyprus.

* **TA2DS - Selim - 14164 - SSB - 0540 - Aug.** QSL via WA3HUP, Mary Crider, 2485 Lewisberry Road, Yorkhaven, PA-17370 USA.

* **ZP5DCB - Dan - 14206 - SSB - 0523 - Aug.** QSL via the Bureau.

* **OA4CPY - Julio - 14195 - SSB - 0636 - Aug.** QSL via Box 538, Lima, Peru, South America.

* **ZK1SCQ - 14257 - SSB - 0531 - Aug.** QSL via DL6DK via the Bureau.

* **T99A - Mehmed - 14200 - SSB - 0623 - Aug.** QSL via Mehmed Cosovic, Osmo Ulica 4, Visoko, Bosnia & Herzegovina, Europe.

* **Y1HK - Haidar - 14243 - SSB - 0631 - Aug.** QSL via KK3S, Jacobus J Berrevoets, 160 Valley Road, Windsor, PA 17366 USA.

* **HK3JJA/0 - Pedro - 14260 - SSB - 0731 - Aug.** QSL via HK3JJH, Pedro J Allina, Box 81119 Bogota, Colombia, South America.

* **H44NC - Norried - 14252 - SSB - 0602 - Aug.** QSL via Norried Chaisson, PO Box 168, Munda, New Georgia, Western Province, Solomon Islands.

* **9Y4GR - Greg - 14005 - CW - 1120 - Aug.** QSL via 9Y4GR, Gregory Redon, 8 Henry Pierre St, Saint James, Port of Spain, Trinidad, South America.

* **S07WW - Mark - 10101 - CW - 0634 - Aug.** QSL via ON5NT, Ghis Penny, Lindestraat 46, B-9880, Aalter OV, Belgium.

From Here There and Every Where

* **Brazil - ZW4SM** was on the air from 4 to 6 September as a special event station celebrating the 176th Anniversary of Brazilian Independence. QSL via the Bureau or via PY4SM, PO Box 120, Belo Horizonte, MG - 30, 123 - 970, Brazil.

* **Rotuma - 3D2. 3D2DX** was active until the middle of September. QSL via EA4CP, Jose Diaz, Doce de Octubre #4, 28009, Madrid, Spain.

* **Indonesia - YB.** Akhmad YB4JIM reported that the Indonesian postal system will now take one IRC to cover full postage to another country. No green stamps please.

* **Algeria - 7X.** Med 7X4AN advises that his new and only direct QSL address is: Boukhiar Mohamed, PO Box 30133, Barcelona 08080, Spain.

* **Albania - ZA.** A number of Albanian amateurs were active from Sazan Island early in September using the callsign ZA0IS. QSL via Arben Goxhaj ZA1K, Box 1, Westbrook, MN-56183, USA.

* **Vietnam - 3W.** Mirek VK3DXI was active from 29 August to 4 September from Ho Chi Minh City (Saigon). QSL only via DL4DBR.

* **Singapore - 9VI.** The new work assignment for Mirek VK3DXI will be in Singapore for the next few years. He hopes to activate his old callsign again, 9V1XE. QSL via DL4DBR.

* **Kerguelen Islands - FT5X.** Helios F6IHV, who was active as FT5XN, left the island on 28 August.

* **Falkland Islands - VP8.** Jan K4QD will operate as VP8CRB from the Falkland Islands for three weeks from 26 December to 16 January. QSL via Jan Heise, K4QD, 614 Dundee Circle, West Melbourne, Florida 32904, USA.

* **USA County Hunters.** The Down Under County Hunters Net has moved to 14336 kHz at 0330 UTC.

* **QSL Information.** Bill Yoreo K1WY (Box 2644, Hartford, CT 06146-2644, USA) is the QSL Manager for ET3BT, G16YM, TF8GX, TF7GX, UA0DC, UA0ZBK and UA0ZBK/0.

* **Vietnam QSL Information.** If you still need a QSL for a contact with XV7SW the only valid route is now via his QSL Manager SM3CXS as Rolf has moved to Japan, and he does not intend to operate from there.

* **Gibraltar - ZB2.** During the month of September, stations located in Gibraltar were able to use the prefix ZG2 to celebrate Gibraltar National Day.

* **Nevis Island - V4.** Some time ago it was reported there would be a referendum on Nevis Island regarding independence status and to secede from St Kitts. Only 60% of the residents voted in favour of the secession against the required 75%. The result is that, for the time being, there is no possibility of Nevis being a new DXCC country.

* **Nigeria - 5N0.** OKIAUT will be active for three years from Lagos as 5N0/OKIAUT. QSL via his home call.

* **Honduras - HR.** Contrary to earlier reports, Mike K3UOC (ex 7Z500) will not be going to Honduras at all.

* **Russian QSL Bureaus.** It was reported some years ago, but here it is again. Russia has two QSL Bureaus. One is operated by the IARU recognised Russian Amateur Association, SRR, Box 59, Moscow, Russia. Three mailings per year.

The other dates from the Soviet time, Box 88, Moscow, Russia, the old bureau operated by the Krenkel Radio Amateur Club with one mailing per year.

* **QSL Information.** The correct QSL manager for ZD8T is AC4IV.

* **Juan Fernandez - CE0.** Brian VK5FV reports that he worked CE0ZIS around 2130 UTC on 14215 kHz. It seems he favours the 14212 - 14213 kHz frequencies.

* **Pitcairn Island - VP6.** The Pitcairn Amateur Radio Club will be active on 22/27 October from Ducie Atoll (OC-182).

* **Comoros - D6.** Hermann DJ2BW will be on air from 25 October to 7 November as D68BW. He will be operating CW on all bands, with priority on the LF Bands. QSL to home call.

* **Martinique - FM.** Vincent F5JMV will be on air for three years as FM5JV. QSL to home call.

* **Grenada - J3.** Keep a lookout for J3 calls. More than a dozen US and European DXers will be active with the J3 prefix/home calls and as J37K, J38NA, J37L, J37A, J3X and as J3A from 20 to 27 October. QSL J3A via WA8LOW, the others via home calls. ➔

AWARDS

John Kelleher VK3DP

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New Entities

What are these new "entities" which have recently raised their heads? Given that some operators may have worked these islands years ago, only now do they aspire to be called separate DXCC countries. On closer inspection, the Marquesas Islands and Austral Islands are no more than outposts of French Polynesia (from Greek poly "many" and nesoi "islands").

The French Iles Marquises are located approximately 1200 km north-east of Tahiti. They are a pair of volcanic islands, namely Hiva Oa and Nuku Hiva. The larger of the two is Hiva Oa, some 200 square km. Mountains on this island rise to about 1200 m, falling directly to the open sea, having no coastal plain or fringing coral reef. It is the burial place of the French artist Paul Gauguin. Nuku Hiva is of rugged wooded terrain with Mt Tekao rising to 1110 m near the centre of this beautiful island of only 130 square km.

The French Iles Australes, also known as Tubuai Islands, form part of a vast submerged

(Continued from previous page)

* Netherlands Antilles - PJ. PJ9/W4JVN will be on the air prior to the CQ WW SSB Contest as from 20 October, and PJ9Q will be on air during the contests. QSL via W4JVN.

* New Zealand - ZL9. The New Zealand communication authorities have confirmed that stations using the call signs ZL9DI and ZL9AI are pirates. No such calls were issued and no amateurs are on the Antipodes or Bounty Islands. No doubt this would apply also to ZL9BI "Don", heard recently working some USA west coast stations and lots of obviously fictitious QSOs to rare parts of the world.

* Laos - XW. "Zorro" JH1AJT, who led a small DXpedition to Laos in July 1997, apologised for being late with the XW1A, XW30 and XW30A cards. He enclosed several photos with his QSLs, some of them appearing in this column.

mountain chain. They comprise five inhabited islands scattered over 1300 km, and are the most southern archipelago of French Polynesia.

At the time of going to press I had not researched Temotu Island, except to say that it forms part of the Solomon Islands group. DXCC approval for all the above-mentioned should occur very shortly this month.

Please take note that I usually devote the November Awards Column to YL and XYL members. I will print all information received by 1 October. Meantime, I will peruse some of the YL DX Awards listings.

Council of Europe Cup

While on the subject of things French, to honour the 50th Anniversary of the Council of Europe on 5 May 1999, the Council of Europe Radio Amateurs Club, and Radio Club TP2CE, have decided to award a Cup. Here are the Rules:

(1) All QSOs with the Radio Club station TP2CE and the other prefixes used: TP0, 1, 3, 4, 5, 6, 7, 8, 9, 10, 50 and T71CE (DXpedition in San Marino) are eligible.

(2) Contacts with call signs TP2CE, TP10CE and TP50CE count five points and other QSOs one point.

(3) All QSOs on ALL HF bands, including WARC bands, from 1 June 1986 to 1 June 1999 are eligible.

(4) Two categories:
(a) Amateur stations licensed for more than five years; and

(b) Amateur stations licensed for less than five years as at 1 January 1999. To verify please send a photocopy of your licence.

The first three stations in each category will receive a 50th Anniversary Cup. The stations

* Iraq - YI. Special Event Station YI98BIF celebrated the 10th Babylon International Festival from 22 September to 1 October. QSL via Radio Club of Baghdad, Iraqi Association for Radio Amateurs, PO Box 55027, Baghdad, Iraq.

QSLs Received

TY1IJ (3 w - DK8ZD); 8P9Z (3 w - K4BAI); FO0MIZ (4 w - VE3HO); FO0FI (4 w - K6SLO); ZK2FT (3 m - DL7FT); WA4FPW/NH1 (3 w - WA4FFW).

Thank You

I am always grateful for the assistance given to me by many of you. Special thanks are due to VK2EFY, VK2KFU, VK2TJF, VK2XH, VK4LV, VK5FV, VK6LC, VK9NS, JH1AJT, ARRL DX News Release, Ohio/Penn DX Bulletin, QRZ DX, The 425 DX News, The DX News Letter, The DX News Magazine, International DX Association (INDEXA) and the DX Magazine. ar

ranked fourth and fifth will receive a personalised banner of the Council of Europe. The deadline for the submission of logs is 1 August 1999. There is no need to enclose QSL cards. Your logs will be compared with those of the Radio Club.

The address for submission of logs is: Council of Europe Audio-Visual Resources Unit, Mr Kremer, Francis F6FQK, 67075 Strasbourg, France. E-mail: f6fqk@ref.tm.fr.

Council of Europe Award

The Council of Europe Award is attributed to all licensed Amateur Radio Stations, and Short Wave Listeners that fulfil the following conditions. Contacts with member states of the Council of Europe (see list below), and Radio Club Station TP2CE (or TP0, 1, 3, 4, 5, 6, 7, 8, 9, 10, 50).

1. HF
- A. Mixed (CW - Phone - RTTY)
- B. CW
- C. Phone
- D. RTTY
- E. Mono-band 160, 80, 40, 20, 17, 15, 12 or 10 metres, obtainable in Mixed, CW, Phone and RTTY.
- F. Five Band 80, 40, 20, 15 and 10 metres, obtainable in Mixed, CW, Phone or RTTY modes.
- G. Nine Band 160, 80, 40, 30, 20, 17, 15, 12 and 10 metres, in Mixed, CW, SSB, Phone or RTTY.
- H. YL Award, only with YL Stations.
2. 2-50 MHz, obtainable in Mixed, SSB, CW or RTTY.
3. Satellite.
4. A log extract, signed by two other amateurs, containing call sign, country, mode, frequency or band, and date should be sent to the Award Manager F6FQK, Kremer Francis, 31 rue Louis Pasteur, 67490 Dettwiller, France. OR Conseil de L'Europe, Regie des Moyens (Audiovisuels) Cerac, Mr Kremer Francis, 67075 Strasbourg Cedex, France. E-mail f6fqk@ref.tm.fr.

Fees for both Awards \$US10 or 12 IRCs.

Council of Europe Award - Countries List

Albania, Andorra, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Macedonia, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and Council of Europe Radio Club Station "TP".

ar

Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator
Freepost No 4, Rubyvale QLD 4702
Tel: 07 4985 4168
Packet: VK4KAL@VK4UN-1

Spotlight on SWLing

Robin L Harwood VK7RH

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E-mail: robroy@tassie.net.au

via the facilities of WWCR in Nashville, Tennessee. Now a test transmission via the Merlin transmitters in Singapore has been heard. The time is 1000 UTC and the programming is identical to WWCR. The frequencies are 5070 kHz (WWCR) and 11740 kHz (Singapore).

Asian Languages

Have you noticed a dramatic increase in the number of HF operators mainly speaking in Asian languages? These signals are predominantly unauthorised and pop up on any frequency unannounced. I have heard them previously in aviation segments but now they are even operational within the major broadcasting allocations of HF. It seems out of control.

Second BBS World Service Network?

There have been consistent rumours of a second BBC World Service network commencing in the last week of October to coincide with the major schedule changes. This network may be all news.

Another Web Radio

I recently received an e-mail advising me about another Web remotely controlled short-wave radio. This one is based in Sweden and utilises either a Yaesu FT-757GX or an Icom PC radio. Use is restricted to registered users. The URL is <http://www.javaradio.com>.

Malaysia

Malaysia has been in the news lately with the Commonwealth Games and recent domestic upheaval. You can find the external service on 15295 kHz from 0630 UTC. A relay of the domestic network can be heard most evenings on 7295 kHz with English programming.

Well, that is all for October. Please note that I no longer use the packet address of VK7RH@VK7BBS#LTN.TAS.AUS.OC ar

Times are changing. The year is drawing to a close and it is time that radio amateurs started to realise that they are going to have to live with intruders.

Why, I hear some ask? Well, it appears to me that most are doing "just that" now, otherwise observers and others would be forwarding logs each month, and at other times, to those States with Co-ordinators, or direct to me!

As amateurs we should not expect the Quoin Ridge HF Co-ordinating Centre to do all the objecting on our behalf. At present, objections to the use of amateur bands by illegal intrusions can be carried out by Internet e-mail, by directing complaints to the Head Technician of the offending station, once the QTH is known.

In my term as Federal Intruder Watch Co-ordinator, I have received much support and suggestions for upgrading the IWS from the Tasmanian Area Office of ACA. These have mainly been pin-point references of intruders. We can not expect this to continue *ad infinitum*, nor should it!

Measures have been implemented to do more of this RDF at point A level. Other suggestions from the ACA have been looked at and trialled before being put into practice, since proving their worth, and in some cases streamlining procedures. My thanks, Dave. Primary observations emerged from the same source.

To repeat, times are changing. The International work of the Monitoring station has increased by 75%, and the Perth operation has closed down. So, more than ever, we need to stand on our own feet.

Commercial operators have their intruder problems also. Marine, Aircraft and many others pay largish sums of dollars to have their problems attended to; therefore they have preference over the amateur. Could we afford \$190.00 per hour? And who would pay it?

From last month (September) a much greater scrutiny of the log sheet has been carried out. All frequencies have been

Well, Spring is here and we are now noticing quite an improvement in propagation, as the sunspot numbers steadily increase. The higher frequencies are becoming active and I would surmise that the next few weeks will see these numbers sharply increase. The peak of this cycle is expected around 2000.

Now that I am back home in Tasmania, I have become involved in other activities and therefore have not been paying too much attention to short-wave. Propagation is certainly different here in northern Tasmania to SE Queensland.

Time Changes

Don't forget that there are going to be major changes to the broadcasting allocations on HF on 25 October when Europe and North America revert to standard time. That same weekend, NSW, Victoria, and South Australia will go over to Daylight Saving Time. Tasmania has been on it since 4 October and NZ from the 12th of the month.

Dublin

Recently, the President of the Republic of Ireland was in Australia. Dublin, as you may be aware, has been broadcasting to Australia

checked again, several times, before any RDF is contemplated from the ACA.

I still believe that the majority of receivers in use by amateurs are prone to "birdies" and "spuri", either internally or generated by our over-burdened electronic age of gadgets in the home or surroundings, thus creating "mysterious intruder signals".

My FT-747GX suffers this complaint, but the older GEC 402KN 15 valve receiver is very quiet and much preferred for this work. It has numerous filters, including crystal, built right into the system, not added on as with the DSP audio filter series. Readers can refer to *Electronics Australia* January 1996, page 29, if they wish to "read all about it".

What I am saying is that, unless you can guarantee your receiver does not generate birdies, etc, take another look at the intruder on B9W or F1B, preferably with a second or third receiver on the same frequency, before the log is sent to your co-ordinator, or to me.

Notes from Bob ZL1BAD, the Region III Co-ordinator, indicate intrusion on frequencies 14146.5, 14145.5, 14146.5 and 14147.5 kHz, mode F1B at 144 bds, 240 Hz shift, on 24 hours a day from near Moscow. Steps are being taken to remove this long term intruder. All Region administrations are being advised to complain.

ar

ARDF Amateur Radio Direction Finding

Ron Graham VK4BRG

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Experimenting and Self Education

Literature defining Amateur Radio always mentions the experimental and self education aspects of the hobby. I think ARDF allows us, amongst other things, to pursue these aims.

ARDF equipment may range from the very simple up to the quite complex. In a lot of respects, it's the simpler type of equipment that gives us the most scope for experimenting. Some ideas, that I would like the time to follow up, are along the theme of simple and inexpensive ARDF equipment:

- A simple 2 metre AM type receiver, say a fairly selective tuned circuit, diode detector, AF amplifier. This could prove satisfactory over a range of 100 metres or so and thus form a suitable, inexpensive receiver for groups of young people getting involved in ARDF.

- One hears of 2 metre beams being made from a couple of dollars worth of materials. This could be followed up and hopefully provide the necessary antenna for the above-mentioned receiver.

- A simple 80 metre DF receiver, possibly direct conversion on 3.5795 MHz where inexpensive colour burst crystals are available. Maybe it could use a ferrite rod antenna and dispense with the complexity of a sense antenna.

With the theme of keeping things simple, users of this equipment could operate in a defined area. The starting, and hidden transmitter positions, can be chosen so that it is not necessary for competitors to need to be able to resolve the 180 degree ambiguity problem of the ferrite rod antenna.

Building Equipment

One also reads, these days, of amateurs becoming "black box" operators. ARDF equipment does provide an opportunity for us to actually build equipment.

In my opinion, some of those simple projects could also provide excellent construction projects for radio clubs, scouts, guides, and other groups. Imagine, for example, demonstrating the directional properties of a two metre beam made in a few minutes from a few scraps of commonly available material!

Learning Aspects

In addition to the learning opportunities mentioned above, ARDF operating gives one marvellous opportunities to experience various aspects of radio wave propagation.

For example, I normally give a final test to some DF equipment I build by using it with a small signal source placed on the edge of the veranda. This signal source radiates with an antenna just 50 mm long. I note, with interest, that if the signal source is not placed centrally between the steel veranda posts, the signal appears to come from the closer post.

Observing signal reflections from large metal objects is also interesting. Another interesting aspect, that is easily demonstrated, is the 20 dB or so difference in signal strength when a vertically polarised receive antenna is used with a horizontally polarised transmit antenna (or vice versa), commonly called cross polarisation.

This phenomena can be used as a DF operating technique to attenuate signals quickly by simply changing the polarisation of your DF receive antenna. The antenna direction properties are, of course, still usable under these conditions.

Power Line Noise

Traditionally, DF equipment in the 70 MHz region has been used to locate noisy power lines.

A couple of years ago I became aware of emergency beacon DF equipment on 121.5 MHz being used, and I was told it was providing superior performance. The theory was that, at 70 odd MHz, the power lines still acted as reasonable transmission lines and thus the signal from a noise source could appear to come from a power pole quite some distance from the actual noise source. Apparently, at the higher frequency of 121.5

MHz, the transmission line is less efficient, and thus the noise signal more localised. Consequently the noise source is often quicker and easier to locate.

Just a few weeks ago I learnt from the Rockhampton ACA office that they had occasion to try some 243 MHz emergency beacon DF equipment in assisting to locate power line noise and that they were very impressed with the results. I guess the same theory of less efficient transmission lines applies and thus the actual noise source becomes more obvious.

By the way, those emergency beacons normally operate on 121.5 MHz and double that frequency, 243 MHz.

Apart from the slight education value of the above, what does this mean to the Amateur? If you have two metre amateur DF equipment, often referred to as a sniffer, you have the means to locate power line and other noise sources around your QTH.

More on Emergency Beacons

There were some 35 genuine and 111 inadvertent/malicious activations in the Australian area over the last six months. With more and more beacons being used in more spheres (bush walkers, four wheel drive operators, personal security, etc), as well as the traditional marine and aviation areas, this problem is naturally going to increase.

The above figures did not include those inadvertent/malicious activations that were quickly resolvable with, say, a phone call.

Those searches can often be quite lengthy and expensive, particularly when aircraft and helicopters are involved. The Australian Search and Rescue Co-ordination Centre in Canberra is addressing the problem. During talks with one of their officers, who was preparing a report on this matter, I mentioned that Amateur Operators could be in a good position to assist, maybe as part of WICEN. He mentioned that he has been and is considering Amateur involvement.

Maybe the WIA should be addressing this matter as it could offer marvellous exposure and involvement of the Amateur Service to a worthwhile public cause. This should also offer many benefits to Amateur Radio in general, and to those amateurs who became involved in particular.

Guides

It is pleasing to note that the Guides, on a State level in WA, are becoming involved in ARDF. They join the SA Guides.

In both cases, amateurs are apparently involved. It would be great to hear from those amateurs and possibly add a report from them to this column. Looks like the girls (Guides) are ahead of the boys (Scouts) on this one!

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WIA Call Book '99

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FTAC Notes

John Martin VK3KWA

Chairman
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PO Box 2175, Caulfield Junction VIC 3161

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RMB1627, Milawa VIC 3678
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Future of the 70 cm Band

Recently there has been some concern about the ACA's use of temporary allocations in the 70 cm band. The ACA allocated two frequencies for yachting trials in the Sydney area during August, and some amateurs are concerned that these temporary allocations are a threat to the 70 cm band.

A couple of points need to be made about these allocations. First is the fact that there is nothing new about them. There have been many of them in the past - they just haven't been publicised.

Second is the point that, while the amateur service has secondary status in the 70 cm band, temporary allocations are what you could call sub-secondary. The ACA consults the WIA about proposed frequencies for temporary allocations, and we have the right to say no to any temporary allocations that would interfere with amateur operation.

So, there is no need for concern that temporary allocations might be the thin end of a wedge to reduce amateur access to the 70 cm band. In fact, they are probably a good thing. Better to share our spectrum with occasional low power temporary stations than to find it gobbled up by commercial interests.

Data Base Update

At the time of writing, the database update for the new *WIA Call Book 99* has just been completed.

There have been many changes to the beacon, repeater and packet lists, and I would like to thank the following amateurs for information: VK2EO, VK2KU, VK2MT, VK2ATY, VK2JPR, VK2TDT, VK2XGJ, VK3XV, VK3TLW, VK4KWM, VK4ZBV, VK5AVQ, VK6HK, VK6UU, VK6ZRT and ZL2TWS. Also the secretaries of the following clubs: Central Coast, Coffs Harbour, Far South Coast, Hornsby, Hunter Branch, Kempsey, Mid South Coast, Oxley Region, and Wagga.

Last year I received a full update to the New Zealand beacon list just after the Call Book went to press. This year's list includes these

An Old Friend from MIR will Fly on the ISS.

The AMSAT News Service has reported that veteran cosmonaut Sergei Krikalev, who will be one of the first full-time residents on board the International Space Station, will join the crew of STS-88, the first American assembly mission.

Krikalev will join Commander Robert Cabana, Pilot Rick Sturckow, and Mission Specialists Nancy Currie, Jerry Ross and Jim Newman when the Space Shuttle Endeavour launches this December. The seven-day mission will be highlighted by the mating of the United States built 'Unity' module to the Russian built 'Zarya' control module, which will already be in orbit.

Zarya, which was built for NASA by Boeing and the Krunichev Enterprise, is scheduled for launch on a Russian Space Agency Proton rocket from the Baikonur Cosmodrome this November. "*Sergei's experience with both the US and Russian programs and his familiarity with the Shuttle make him a valuable addition to this crew.*" said David Leestma, Director of Flight Crew Operations at NASA's Johnson Space Centre.

A cosmonaut since 1985, Krikalev has accumulated more than one year and three months in space as a member of two MIR space station crews. He has also flown on board the Shuttle once before, as a member of the STS-60 crew in February 1994. During that nine-day mission, Krikalev operated the

changes, along with other information received since then.

The list of LF beacons has been revised extensively, thanks to much information from VK3BRZ. The world-wide 6 and 10 metre beacon lists have also been updated with new and more detailed information. New material this year includes listings of all Australian AM and FM broadcast stations.

If you find any errors or omissions in the new *WIA Call Book 99*, please let me know and I will publish the details.

shuttle's robot arm and supported a wide variety of science experiments. Sergei will be known to Australian amateurs from his days on MIR when he made many voice contacts with VK stations.

Amateur Radio Operators in Space

According to the ARRL news service, the number of astronauts with ham tickets now stands at 86. It seems that NASA realises the great public relations spin-off from having amateur radio involved in space operations. We shouldn't underestimate the importance of this situation from our own perspective.

Our bands, in particular our VHF/UHF bands, have never been more threatened by commercial interests than right now. The close involvement of amateur radio in space operations will be influential in Government department policy development and will give credibility to the work of our delegates to IARU and WARC.

We owe a debt of gratitude to all those at NASA and the various AMSAT bodies around the world who are involved in the Astronaut Amateur Radio Training Program and in efforts on-going towards the establishment of a permanent amateur radio presence in space. These things do not "grow on trees". They are not simply or easily granted. They are the result of long and often difficult negotiations at the highest levels of administration. Read on, the following illustrates what I mean.

International Space Station News (ARISS Lives!)

AMSAT News Service, via Frank Bauer KA3HDO, AMSAT-NA Vice President for Human Space Flight Programs, reports that amateur radio delegates representing seven of the eight countries involved in "Amateur Radio aboard the International Space Station" (ARISS) met in England in late July to continue plans to establish the first permanent amateur radio presence in space.

The session, chaired by "Space Amateur Radio Experiment" (SAREX) Working Group Chairman Roy Neal K6DUE, was held

UHF Link Frequencies

In February and July I mentioned two possible changes to the band plan link segments on the 70 and 23 cm bands.

One is to give priority to high speed data links in the 421 - 422 and 441 - 442 MHz segments. The other is to make provision for wide offset link pairing on 23 cm; for example, using 1240 / 1292 MHz to get a 52 MHz offset. These changes have now been added to the band plans.

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on 29-31 July in conjunction with the AMSAT-UK 1998 Colloquium, held at the University of Surrey. On hand, or patched in via a teleconferencing hook-up, were 16 representatives from the United States, Japan, Italy, Germany, Canada, the United Kingdom and Russia.

The representative from France was unable to attend because of a prior commitment. ARRL Educational Activities Department Manager Rosalie White WA1STO and AMSAT-NA Vice President for Human Space Flight Programs Frank Bauer KA3HDO, served as the US delegates for the ARISS meeting. Participants to the sessions included AMSAT-NA President Bill Tynan W3XO, Space Shuttle Payload Specialist Ron Parise WA4SIR, and RSGB President Ian Kyle G18AYZ.

IARU satellite frequency co-ordinators from Regions 1 and 3 also were on hand. ARISS delegates formed two permanent working groups. The ARISS Hardware Group, chaired by Lou McFadin W5DID, is charged with designing and building space station equipment. The ARISS Administrative Group is charged with setting up ground rules for operation, finding financing, and handling all other administrative details.

AMSAT-NA ARISS Delegate Frank Bauer KA3HDO said ham radio will be part of the

ISS right from the start of construction. "What we're going to do is develop this in stages," he said.

The first flight of hardware aboard STS-88 (at the end of this year) will include a two metre hand-held and packet TNC capability provided by the US team that will be coupled with an antenna system that will be a co-operative effort of the Italian and Russian teams.

The ISS service module, due to be launched next summer, is the section of the ISS in which astronauts and cosmonauts will live during construction. The interim station for the first ISS crew at that point would add (a US supplied) 70 cm capability, a German-designed "digitalker," and eventually a transportable station that could include SSTV and full-duplex VHF/UHF.

The first crews to actually live aboard the ISS will graduate to mobile-type transceivers. Bauer says the final ISS equipment complement is still in the conceptual stages but is likely to include all-mode capability from 10 metres up through 13 cm.

He was quite excited about the teamwork exhibited by the international partners, stating that "as an international team, we were able to quickly put together an interim station, furthering developments already in progress by Will Marchant KC6ROL and Lou McFadin W5DID in the US, Thomas Kieselbach DL2MDE in Germany and Sergei Samburov RV3DR in Russia."

Surrey ARISS delegates also discussed time-sharing and scheduling of the ham stations, crew training, educational opportunities, fund-raising, call signs, and frequencies. Details on these issues remain to be decided. Neal credited SAREX Working Group Principal Investigator Matt Bordelon KC5BTL, for "a superb job of lining up the NASA/ISS officials and channels for what's about to happen."

A key player on the ARISS team, Bordelon is scheduled to travel to Russia soon to work out details of the station installation aboard the ISS service module with Serge Samburov RV3DR, the Russian delegate.

Neal said he was gratified to see the plans coming together to put amateur radio aboard the ISS. "These meetings have the world-wide Amateur Radio family on track," he said. "Amateur radio is now getting ready to fly onboard!"

White said the most significant aspect of the session came on the afternoon of the second day, when countries stepped forward to accept responsibility for various aspects of each Amateur Radio station. "For instance, for the interim Amateur Radio station, the US took responsibility for the packet module, adapter module, radio, and associated cables," she said. White said Germany agreed

to build the digitalker and to work with Russia to develop the antenna feed-through system. Italy will design and fabricate the antennas, and Russia will install the RF cables and antennas. For the transportable set-up, the US will handle the equipment integration and the NASA-required Safety Data Package, while Germany will design and build the system itself.

"The ARISS project will truly be an international project," said White. "It will be well worth our years of work, because each delegate believes ARISS is a wonderful resource for the Amateur Radio service and a great educational tool for our world's youth."

Soap-Box Time

Now, a dissertation like the one above never fails to leave me breathless. Faced with all this top level activity, how can the average amateur, the ordinary hobbyist, the satellite user, help?

One can feel rather at a loss to contribute at any meaningful level. Not so! You can do more than be a bystander!

The very best way we can all help is to show these people our support by joining an AMSAT group, in our case AMSAT-VK. Your membership subscription and sheer numbers will deliver a powerful message to these heroes that their efforts are appreciated. Our delegates will go to meetings knowing that they carry with them the weight of opinion of a large body of like minded amateurs. With many of our frequencies under threat and the "prophets of doom" already at work, the time has never been more appropriate to give these people your support.

A short time from now you will be able to press a button in your radio shack and work the International Space Station on your favourite frequency or mode. Wouldn't it be nice to know you had supported those who made it all happen?

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New WIA Members

The WIA bids a warm welcome to the following new members who were recently entered into the WIA Membership Register:

L21076	MR I L GUY
L21077	MR R RONTALE
L21078	MR N CATTABRIGA
VK2BGR	MR G ROBINSON
VK2CBD	MR B J DAWSON
VK2CCC	MR J C MCKINNON
VK2CIF	MR J C MARRIOTT
VK2HCL	MR G G LEEDHAM
VK2QG	MR P M REEDMAN
VK2UTE	MR G W CLULOW

VHF/UHF

An Expanding World

Eric Jamieson VK5LP

PO Box 169, Maningla SA 5264

Fax: 08 8575 1777

Packet: VK5LP@VK5WI.#ADL.SA.AUS.OC

E-mail: vk5lp@ozemail.com.au

All times are UTC

Beacons

The following beacons are now operational:

50.000 GB3BUX 1093

50.040 ZL3SIX RE66

50.052 PY1AA GG66

50.064 GB3LER 1090

50.090 LW5EJU GF05nm 12 watts to dipole, also runs on 28.226 MHz.

Colin VK5DK advises that the VK5RSE 70 cm (432.550 MHz) beacon is back on the air after minor repairs following water damage. A power module was replaced and power set to 25 watts feeding two phased antennas, one facing east and one facing west. Both antennas are eight elements of the DL6WU design, mounted 16 metres up a self-supporting tower on Mount Graham, 5 km east of Millicent and about 45 km north west of Mount Gambier, the same location as the VK5RSE two metre beacon.

With respect to VK5RSE/b on 144.550, **Colin VK5DK** reports: *The beacon has 4 x 4 element DL6WU design Yagis connected via a four way power divider. One Yagi beamed west, one towards Adelaide, one north east (VK2/VK4) and one east.*

Colin would be interested in any reports of how the beacon's signal is now compared to previously when a turnstile was used as the antenna. E-mail Colin at vk5dk@ansoninc.com.au.

Six Metres

Ron Graham VK4BRG reports on 3/9 that TEP signals from stations to the north had been heard for two weeks. He reports:

2/9 1019: JR1RJU/JD1 in QL17 who said he would be QRT from 3/9.

1034: JA1WLO 5x9 each way with other JAs heard at good strength.

1038: V73AT 5x4 each way. Tim also reported working VR98 (Hong Kong), VK8, VK4, KH6, JD1, JA and on 1/9 a good one in A45ZN in Oman.

Tim also mentioned 28.885 MHz being next to unusable in the evenings due to Asian

QRM. Ron wonders if this will become a problem in VK as conditions improve? He and some others are using 21.445 for liaison.

Steve VK30T/VK6SIX/KL7SIX supplied the following from the JA Cluster on 3/9:

1343 VK8AH - JA2POK 50.110 SSB

1339 VK8AH - HL1LTC 50.110 SSB

1300 VK8VF/b - JL4GTO 50.057

1250 VR98LC - KH2D 50.110 CW QSO
RST 559

1216 VK8AH - KH2D 50.109 SSB QSO

1114 VK8AH - V73AT 50.110 SSB heard

1109 VK8AH - C21JH 50.110 SSB QSO

1015 VK6JQ - JE4JFP/4 50.0959 CW 579

1011 VK4AFC - V73AT 50.106 SSB QSO
5x3

0936 VK8VF/b - V73AT 50.057 heard

0935 V73AT - YB0ARA/9 50.110 CW QSO

0841 V73AT - 55.2498, 55.2498 video/TV
American Samoa

0655 V73AT - JA5FDJ 50.110.8 CW

0703 V73AT - JA2IB 50.106 CW

0702 V73AT - 49.750, 49.750 video/TV

0330 ZL3TIC - 49.750, 49.7480 strong video/
TV

Steve VK30T reported that on 3/9 sun noise was very obvious at 2100 (sunrise) with bursts and pulses. He believes that the Pacific path is going to open early this year possibly first or second week in November.

He says: *My contingency plans for operating from KL7. Take a note of my phone number I 970 373 5435. Sunrise is 1400 approx and sunset 0200 on 21 September. I think my maths are right. It is six hours ahead of east coast VK and is on Alaska DST at moment. Please don't call before 6 am or after 1000 pm AKDST OK?*

I will monitor the 48 MHz TV from Europe and have the frequency list. Beacons I'm not so sure about. Let's hope for a chance between September and December. VK path will be 0000 to 0130 just before my sunset in Wasilla. Location is 850 feet asl and take off to Pacific is good.

From VK5KK: *Time to get your six metre gear working. This morning's (29/8) MUF is peaking to about 35 MHz on the NE path to USA. Usual peak is about late September. JA openings are just starting to happen again. For more MUF predictions see the map at <http://holly.cc.uleth.ca/solar/www/realtime.html>*

From Mike ZL3TIC: *I have received many emails seeking the 45/46/55 MHz TV and offsets in ZL and VK. A list of all the offsets and TV stations in the Pacific can be found at <http://www.radioinfo.co.nz/6mfreq.htm>*

22/8: Bob ZL3TY had a brief opening to VK. 0141: VK7RAE/b 539, 46.240 MHz VK TV S2; 0150: VK3TMP 5x5, 0157: VK3XLD 5x3, 0204: VK3ZYS 3x1, 0208:

46.240, 51.740 MHz TV carriers up to S9; 1045: 45.250 MHz TV carrier auroral from south.

Jack Haden VK2GJH/T30JH/C21JH

A letter dated 6/9 from Jack Haden VK2GJH reports that he has just returned from Nauru and Tarawa where he had been active as C21JH and T30JH over the past three weeks.

Nothing was noted on 50 MHz from Tarawa due to severe solar activity which took place during the 18-25/8. However, JA4, BG7, BG5, BV6, KH8, VK4, WB5, WB6 and KH0 were worked on 29 MHz FM.

Jack wrote: *The solar disturbances followed me to Nauru but things started to pick up on 31/8 with the solar figures 172 17 and 2, there was NZ TV 45.260 MHz at S9 from 2255 while 45.250 was up and down at the same time. Despite many calls on 28.885 and 50.110 MHz SSB not one ZL was raised.*

On 2/9 the figures were 177 15 and 2, nothing from the VK/ZL area all day. At 1010 I heard CW around 50.108 MHz and at 1012 Phil YB0ARA/9 was worked at 5x2-7 SSB report. V73AT in the Marshalls came on around 1017 and spoke with Phil, however V73AT could not hear me nor I him despite the good propagation to YB. At 1037 found VK8VF/b at 552, many calls on 28.885 and 50.110 but no one raised.

On 3/9 the figures were 163 8 and 2 and the first indicator to come through was VK8VF/b at 519 from 0405 to 0409, again no one raised on 28.885 or 50.110 SSB. Even tried 29.600 FM as I had worked VK8ZMA/4 Thursday Island and VK8RH in Darwin just days back on 29/8, but no luck. VK8VF/b again at 1009 519, rushed to 28.885 and 29.600 FM but no one about, many calls placed on 50.110 with zero result. At 1100 VK8VF/b 539 and made a long CQ on 50.110 SSB, this netted VK8AH 1101 5x6, YB0ARA/9 at 1104 at 5x1 and VK8MS at 1112 3x1.

After working those three I checked the indicators and found beacon JA2IGY/b 519 at 1114, again many calls placed on 28.885, 29.300 FM (JA call spot for 29 MHz FM) but not a soul heard. JA2IGY/b finally faded out at 1159 with not one JA heard.

On 4/9 the figures were 163 8 and 2 and 29 MHz FM was very lively during the day. At 1026 JA2IGY/b was 419, Malaysian TV was very strong at 1048 at S6 peaking S9, nothing raised on 28.885 or 50.110. At 1050 YB0ARA/9 heard on CW 50.105 MHz 569 and he was still there at 1245.

Not a single station worked so I returned to HF to work the hordes in Europe. The 29 MHz FM band performed well, VK8, VK4, VK3, VK2, ZL1, FK8, 5W1, KH6, KH8, BG4, BG6, BD7, JA3 and JA6 all worked. Heard

VK5, ZL3, KB4, W6 and NS but not worked. Like six metres, no chit-chat on the DX call channel 29.600 FM.

As the six metre beam was left in Tarawa due to the poor conditions, all the mentioned notes from Nauru were derived from the IC-736 HF plus 6 m rig and an Emtronics ED-52C trap dipole 80 to 10 metres through a Yaesu FC-901 ATU to make it work on six. Better than nothing and contacts were made. I am sure more contacts would have been made if people were about.

Ruben C21RK will repair his six metre antenna when he finds some spare time; also Norman C21NJ expressed interest in six metres after seeing my set-up.

Is anyone willing to donate a decent five element six metre beam for Nauru, not a heap of junk as they corrode quickly with the salt air up there. I could go back there any time before Christmas, not sure.

News Release

50 MHz station at Seagnet 98 Convention The special station to be set up at the Seagnet 98 Convention Hotel will include a 50 MHz operation. The station will operate as follows:

Call sign: 9V8SEA
Rig: Yaesu FT-620B
Power: 10 watts
Tx frequency: CW 50.085 MHz
SSB 50.115 MHz
Rx frequency: 50.000 to 51.000 MHz
Antenna: 6 element rotatable Yagi
Commencement: 0200 UTC 13 November 1998
Shut down: 0700 UTC 15 November 1998

Hotel rates have now been reduced to \$140 per day for both single and double occupancy. Additional perks such as free breakfast will hold.

For more information contact Mr S Sasaki 9V1YJ - e-mail mkskg@com.sg.

Overseas

Internet Six News from Geoff GJ4ICD.

4/8: JA1VOK reports: Heard VK8VF/b 539 at 1129, and worked Andrew VK8AH on 50.110/50.130 SSB 5x7 at 1135 probably for the first time from eastern JA this summer.

6/8: Alan 3CSI reports: Very strong signals to Europe. Managed to have 41 QSOs in the hour the band was open. I will always continue to work split, Tx on 50.130 and Rx on 50.180-190, during major openings. 7/8: No strong signals - all QSOs were CW and weak. The strongest was 559. I had 25 QSOs.

10/8: PY5CC reported a good opening to Europe. The band opened 1843 until 2004 and he worked 101 stations in 19 countries. Worked into EA, 9A, I, T77, DL, S5, YU, US5, OE6, ON, F, IS0, HB9, G, CT1, 9H, OZ, GJ and GU. The good news is that it

was the first time he had worked the Ukraine with US5CCO, new zone, grid and country number 159. Lost YO and HB0/HB9QQ.

12/8: JA1VOK worked VK4D0 5x6 at 0835, VK4FNQ 5x9 at 0909 and heard VK8RAS/b (PG66) 569 at 0812 for the first time this season.

28/8/98: 1810: ZS6AXT heard in GJ 539 - remember this? 10 years to the day! Earlier comments de GJ4ICD: ZS6 this month? 10 years coming up! I have been doing some checking on the openings last cycle, on 28/8/88 at 1716 ZS6XJ was into GJ for the first ever ZS6 worked on six. From then on there were numerous openings to South Africa until 31/10/93, that's five years of ZS6s, so don't panic when you hear your first ZS station on six metres, there will be many more. Watch the band later this month for ZS6 and VK in October.

Dave N5JHV has won the 1998 Challenge with the QSOs to Japan at 10,263 km, the best DX for 17 years! de GJ4ICD

Ted Collins G4UPS for his August report covers from 16 to 31 August. In that period Ted worked 9A, 9H, CN, CT, DJ, EH, EH8, EH9, ES, F, GB3, GI4, I, IS0, LA, LY, OD, OE, OH, OK, OM, ON, OZ, PA, S53, SM, SP, SV, UR5, YU and ZB for a total of 31 countries. [Where are stations in EI, HA, LZ, YL and YO? I'm just curious. VK5LP.]

UK Six Metre Group (UKSMG) Announcement Page

Chris G3WOS reports: Cycle 23 is upon us with sunspot counts up to the 165 mark, so don't forget to visit the UK Six Metre Group "announcement page" daily at <http://www.uksmg.org/notice.htm>.

50 MHz and 144 MHz Sporadic E

(Emil W3EP from The World Above 50 MHz in November QST.)

The most interesting openings for July involved the western states, whose loyal VHFers often feel left out of the exciting events that seem common in the rest of the country. Six metre operators as far east as New Mexico had two chances to work Japan. Those in the Pacific Northwest found Hawaii on 50 MHz via sporadic E. Stations from Washington to southern California enjoyed several days of tropospheric ducting into Hawaii on 144 MHz and higher.

Two unusual double-hop openings linked Hawaii and the western states for the first time in many years. On 4 July at 0341, Lance Collister W7GJ (DN27) in Montana completed a contact with WH6XM for his fiftieth state. There were no other reports during this event, but plenty from the opening to Hawaii on 15 July. As early as 2315, Colorado stations were working KH7FV and others in

Hawaii. N5JHV in New Mexico made the grade by 0130.

There was sporadic E on the band somewhere in the US and Canada on more than 20 days of the month - at least five with double-hop conditions, but many reports complained that openings were generally scarce and of short duration. Spicing up the rather ho-hum conditions were a number of DX stations that could be worked via single hop, including ZF1DG, CO2OJ, KG4AU, KG4GC, VP5JM, and XE1NVX (EK09).

Two Metres and Above

Ron VK3AFW reports that on 2/9 there was a strong opening from Canberra to Adelaide on two metres. Most contacts were by FM and mainly via repeaters. It started at around 0000 and remained until 0300.

It was probably an Es opening, although it is a bit early for such on two metres. The footprint apparently extended into the Barossa Valley (VK5) and along the south east region of NSW, from the eastern end of the Victorian border to Wagga. (info from Reg VK1MP).

David VK5KK comments: Further to Ron VK3AFW's observations on the Adelaide/Canberra path on 2/9, this may have been tropo as we had reasonable conditions the previous night from Adelaide to central and western Victoria on the tail of the earlier VK6 opening.

I gather from comments this end that VK5RBV (146.825 MHz, also 438.425 MHz) was the repeater accessed. This repeater has recently been relocated to a new site east of Tamunda about 90 km NE of Adelaide. Height is about 550 m ASL. It has an absolutely perfect eastern look out (better than Mount Lofty VK5VF, or any of our other repeaters to the east). Quite a few VK3s have accessed both inputs over winter, sometimes well past mid morning.

The repeater site tests have been so good that plans are progressing to locate a beacon on the same site (432.455 MHz) beaming 80 to 150 degrees. This should be of interest to central VK2 and VK3. I'll keep the reflector informed as to when it will be available.

Gordon VK2ZAB says that most daytime activity occurs at weekends. However, that doesn't mean that there is no activity during daylight hours Monday through Friday.

He reports: From this location the following stations have been worked on two metres and/or above on recent weekdays:

VK4AFL Birkdale, Brisbane, VK2ZKU Springwood, VK3BWT Mallacoota, VK4TZL Hervey Bay, VK2TWR Nimmitabel, VK4IC Caboolture, VK4ZOW Pittsworth, VK2EMA Tottenham, VK2FHN Shellharbour, VK2TP Wellington, VK2AAS/p Mollmook, VK2FA/m Newcastle, VK1MP Canberra, VK3TMP

Somerville, VK2ZW Stroud, VK2ZT Mount Pleasant and VK2BE Earlwood, Sydney.

Others sometimes heard include VK1BG, VK2BZE, VK3AJN, VK3AMH, VK2APG and VK1DA/m. Apologies to those missed.

The point is that there is activity. Most active time is from about 2115 until about 2300. Most participants are retired, some get on before they go to work.

Chas VK3BRZ adds: *I heartily concur with Gordon VK2ZAB. There is a surprising amount of activity, and propagation, even through the winter. But we want more, especially on 70 cm.*

At this time of year we have great inland tropo to central VK2 from the Melbourne/Geelong area. There is also consistently good propagation to VK7, and occasionally to Adelaide. But where is everybody? Is Tasmania still there? Their lights are on, but there's never anybody home.

We are also coming up to a period of increasing auroral activity. My experience from the last sunspot cycle was that very few auroral events were exploited by VHFers. Most of the time all I could do was sit and listen to beacons.

Lest you think that auroras are of interest to southern dwellers only, I point out that I have worked several Sydney stations, as well as VK2MZ and VK2DVZ at Forster and Taree. Signals have even been heard as far as southern VK4.

Any evening after about 1100 it is likely that David VK3XLD and I are either listening on 144.100 or gas bagging on 144.300. We always leave breaks between overs for callers. If anyone wants a sked they can call me on (03) 52823 167.

Glenn VK4ZTL adds his bit: *Good on you Gordon. How many two metre SSB rigs are out there collecting dust? I listen every evening from 0800 till late, and make an effort to be on air on Tuesday and Thursday mornings (plus the weekends) from 2100 - if you put in the time you will get results!*

Spring VHF/UHF Contest

Rod VK2TWR sends these preliminary notes, which were just too late for last month's issue. The inaugural VHF/UHF Spring Contest has become a reality. The contest will take place on the weekend of 14-15 November over a 24 hour period.

The rules of the contest will be the same as the contest held at the end of January each year. It will be for six metres and above but operators must operate above 50.150 MHz. The Contest Manager is John Martin VK3KWA.

Depending on the success of this contest it may become a permanent fixture on the WIA Contest Calendar. Any enquiries, contact Rod VK2TWR by e-mail towers@srm.blamac.

com.au or John VK3KWA on 03 9580 2620 phone, 03 9580 1724 Fax.

Since the above initial message, Rod has advised the following changes:

Contacts every two hours rather than three hours - I think that will make us busy portable stations as two hours will be better. The contest commences at 0200, giving stations more opportunity to get onto their hills and set up if they are working all day Friday.

Radio Telescope

Trevor VK4AFL advises that: *Whilst in the US recently I visited the world's largest radio telescope located near Socorro, New Mexico. The self-guided tour included a theatre presentation, a visitor centre and a close-up of one of the dishes. I thought a few facts about this impressive facility might be of interest to readers of your column.*

Completed in the late 1970s at a cost of \$78 million, the array, aptly named the VLA

The inaugural VHF/UHF Spring Contest will take place on the weekend of 14-15 November over a 24 hour period.

(Very Large Array), is composed of 27 x 82 foot dishes each weighing 230 tons and spread out over 32 km. A 28th dish is used as a spare and is housed in a 150 foot high shed.

All the dishes are moved on a railway track system so the shape and size of the array can be configured to suit different applications. At optional points along the track each dish is connected via a small flexible waveguide to the main 60 mm waveguide and complex computer software combines each output correcting for variations in dish spacings, ie the delay.

There are six feed options which allow reception of weak signals between 400 MHz and 40 GHz, some gain on the latter, pretty good on the former too! Each pre-amp is cooled to -430 degrees C. Unfortunately, I was unable to obtain gain figures but sensitivity is such that remnants of the big bang can still be heard and most everything else in between. I wondered what sun noise might be like! Just one of those dishes would help my 432 signal along!

Microwaves

David VK5KK reports on changes at the VK5RLZ 12 cm ATV repeater site.

From 22/8 the north beam antenna on the VK5RLZ 2.415 GHz FM TV transmitter has been removed leaving the south beam

antenna only. This is a temporary change, for reasons explained further.

This will have the effect of increasing the signal going south by up to 3 dB, ie in a direction of 110-270 degrees from the Water Tower. The down side is the 10-20 dB reduction to the north. Any feedback on signal increase/decrease will be appreciated. If you have lost the signal, please let me know.

As of 23/8 tests will commence from the Churchitt Rd, Anstey's Hill site of the North East Radio Club on 2.439 GHz FM TV. (VK5GRC). The tests will be between 6-12 pm (local) each night, test pattern only. Equipment five watts into a single slot antenna (the one removed from VK5RLZ), beaming from 200-360 degrees, covering the Central and North Eastern parts of Adelaide. Again, any reports on the Anstey's site will be appreciated.

Glgarange

David VK5KK briefly with a disturbing announcement: Panasonic introduces Giga-range, the first cordless phone to take advantage of the 2.4 GHz frequency. He wonders how the ACA will go type approving these?

Silent Keys

It is with regret that I announce the passing of Don VK5ADC. Don suffered a fatal heart attack on Friday, 14 August 1998.

Don was an active member of the Port Adelaide Club and a current serving member of the VK5 Division WIA Council as Minute Secretary. *de VK5KK.*

Sidney James Smith VK6SJ died 28 April 1998. Sid was a foundation member and Life Member of the WA VHF Group. Sid was involved in the radio scene for nearly 50 years. He worked first as a baker, then joined the PMG Department Broadcasting and worked at country radio and TV sites at Dalwallinu, Wagin and Bunbury.

A full list of Sid's contributions to life are contained in the August 1998 issue of *MHz to GHz*, the Official Bulletin of The West Australian VHF Group Inc.

Closure

By the time you read this you should be watching six metres very closely. Ten years ago activity was rapidly increasing especially to the US and not long after to Europe.

Closing with two thoughts for the month:

1. There's a way of transferring funds that is even faster than electronic banking. It's called marriage; and

2. If you indulge in self-pity, the only sympathy you can expect is from the same source.

73 from The Voice by the Lake

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Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:-

M (James)	DUNN	L70099
D W (Derrick)	BOYD	VK1NR
G V	HUME	VK2VR
R N (Ronald)	ELMS	VK3CN
DA	CAMPBELL	VK5WE
W M (Bill)	CRAWFORD	VK5XB

William "Des" Bird VK3EDB

Des was born on 14 September 1931 in the small Queensland town of Pittworth, on the Darling Downs, and died on 21 August 1998.

At the age of three his father Bill died and the family moved briefly to tiny Southbrook before returning once again to Pittworth so that Des and his sister Hazel could attend school. Des's education was completed, as a boarder, at the Marist Brothers College in Brisbane.

After the war the family moved to Maryborough, and Des found employment with the railways as a fireman and it was here that, after purchasing a 650 cc BSA Golden Flash, he joined the local Motor Cycle Club.

With the "wander lust" growing in Des, he joined the RAAF and served as a Radio Technician-Air, attaining the rank of Flight Sergeant during his 22 years of service. Des had many postings throughout Australia, one of which was at Maralinga, where he witnessed the Atomic Tests. He also played Rugby League for the RAAF, until his knees gave out.

After leaving the Air Force Des went on to spend 20 years teaching at the Royal Melbourne Institute of Technology, where he was highly regarded by both pupils and peers.

Amateur radio played a large part in Des's life. He was a long time active member of the WIA and the EMDRC, where he had at various times held the positions of Club Librarian, Education Officer and Accredited Examiner. His involvement with JOTA each year was tireless, always being there to help set up the communications, help the kids with

basic electronics and kit building and, in the midst of all this mayhem, still find some time to take up the microphone as well.

Des's interests, apart from Amateur Radio, were many and varied. He loved gardening, belonged to the Herb Society, was active at the Surrey Hills Community Centre, wrote poetry and was learning to paint. He was also a member of the Historical Radio Society.

Community Broadcaster "Whitehorse FM" had the good fortune to have Des Bird on board as part of the team. From its inception Des was involved in getting it on air and keeping it there. He was a very able campaigner and fund raiser for Whitehorse FM, as many of us found out.

After a successful heart by-pass operation, which was soon followed by renal and prostate surgery, Des finally succumbed to bone cancer.

He'll be remembered by all of us who knew him as a family man, renowned for his generosity to others and for the strength, courage and dignity he showed in facing the inevitable.

Rest in Peace, Des.
Carl Schlink VK3EMF

Don Christiansen VK5ADC

Don Christiansen VK5ADC died on 15 August, aged 64 years, at his home in Osborne, SA.

Employed by General Motors for 36 years as an electrical fitter, he was always an "anchorman" for social "tug-of-war" events and known for a "Heels In" and "I Shall Not Be Moved" approach. President of the Electrical Trades Union for many years he had a strong sense of fair play. He was proud of his Norwegian antecedents.

A stalwart supporter of the WIA, Don was a member of the Divisional Council in the 1970s and a member of the current Council with the duties of Minute Secretary. Contributing to Amateur Radio in many ways, he kept skeds, participated in nets and was a member of the Port Adelaide Radio Club.

As Divisional President I appreciated his loyalty. He would make his opinion known when he felt it necessary, but was amenable to discussion. It was worthwhile listening to his advice and comments.

I was privileged to speak at Don's funeral service on behalf of the Wireless Institute and as a friend. Around 20 other Amateur Radio operators were present.

Condolences on behalf of the WIA and Amateur Radio operators in general have been extended to his wife Betty, his two sons and daughters and other members of the family. Don will certainly be missed by many.

Ian J Hunt VK5QX
VK5 Division President

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Amateur Radio and the Future

I have long been concerned that simplifying access to the spectrum below 30 MHz could result in anarchy akin to that which is heard daily on the CB frequencies.

The RSGB recently asked for recognised established radio clubs to present their views on the future of Amateur Radio. The following is an abstract of the FOC (First Class CW Operators Club) position statement:

There are complex issues facing the Amateur Radio service which in essence comprise two major facets, namely:

1. *The licensing requirements for access to Amateur Radio. This includes, inter-alia, the regulatory environment that might prevail following IARU deliberations at conferences over the next few years;*

2. *The way in which Amateur Radio actually operates in practice which is not necessarily governed by regulatory regimen nor by commercial practices.*

It is proposed that:

* *It is inappropriate and undesirable to continue the trend of continual lowering of standards for whatever reason but especially in pursuit of numbers, expressed either as members of the Society, or as quantity of licence holders;*

* *Capability in Morse code is no longer a fair sole differentiator between those that have access to HF and those that do not. However, it is an excellent candidate amongst others for demonstration of capability, commitment and worthiness;*

* *Whilst it may, in time, no longer be an international requirement, ability in the use of Morse code will continue to be a valid Amateur Radio skill;*

* *The fact that CW is rapidly diminishing in the commercial world is irrelevant to its validity as a useful mode for Amateur Radio communications;*

* *There is scope for a higher class of Amateur Radio licence than the current Amateur unrestricted;*

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* *There is no validity to the argument that the standard of entry requirement to the hobby is unattainably high.*

Whilst there should be routes into the hobby that are easy, however these routes must be merely a beginning and those who aspire to full rights should be willing to work for them. The FOC wishes to see standards in Amateur Radio maintained and if possible enhanced.

I do hope officers of the WIA (and ACA) who are responsible for forward planning of the Radio Amateur licence will take heed of this position statement and consider its worthiness.

David A Pilley VK2AYD
Cain Close, Wauchope NSW 2446

Re Just Testin' the Water - 2 m Mobile Operators

Like Sid VK2SW I have found 2 m mobile operation in Australia frustrating to say the least.

I first started this activity in 1951 and since then have made literally hundreds of interstate and country trips with little to no result. Indeed, without looking into log books I can virtually recite the contacts made on 2 m. I can recall only one contact from a VK3 location and that was from Mt Buffalo to Albury. In VK2 only one contact on 2 m and

that was in Forbes. I did have a number of contacts on 6 m mobile, and several on 70 cm portable as I took gear with me to Sydney whenever I flew there.

In three trips to Darwin I have made one contact in Alice Springs and one in Darwin. Two trips to Cairns for one contact. Two trips to Tasmania resulted in two contacts. That must mean something, but I know not what. Adelaide also yielded two contacts for about six visits.

Without wishing to upset Sid, I must mention that I was in Wagga Wagga for four days last year without making a contact.

Even when a mobile calls on a repeater, the response is nil, although there is more often than not activity amongst themselves. In short, I go along with Sid's idea.

I'll be in Wagga Wagga again later this year and perhaps we may even "test the water".

Ken Pincott VK3AFJ
17 Norvel Road
Ferntree Gully VIC 3156

Last Word on Return Loss?

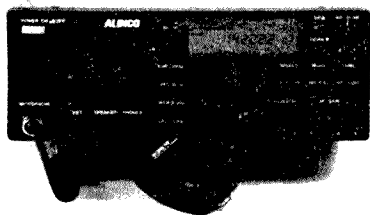
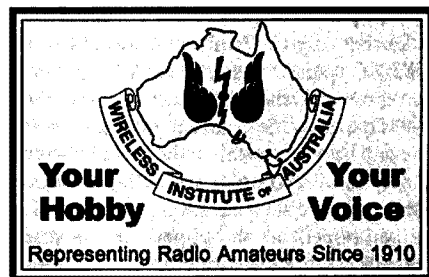
I am pleased with the response to my *Technical Correspondence* item about Return Loss (RL) published in the February 1998 issue of *Amateur Radio* magazine. I am pleased because it illustrates the usefulness

of an *Amateur Radio* segment devoted to technical discussion among readers.

I am not persuaded by correspondents' reasoning, some of which is flawed, to change or retract any part of my original "rash" statements. I believe that most readers, after consideration of the facts, will agree that Return Loss is only a "buzz word" which some prefer to use rather than the more generally useful and technically correct term "Reflection Coefficient".

To quote one of the Thomas Hardy rural characters, "*My words though made as simple as I can, mid be rather deep for some heads.*"

Lindsay Lawless VK3ANJ
Box 760
Lakes Entrance VIC 3909



Radio ar Communications

incorporating **AMATEUR RADIO ACTION** and **CB ACTION**

JOTA is coming in mid-October. Are you ready to help?

Published by
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Gez whiz, you really have to wonder where it will end. The Aussie dollar may be about as popular as a pork chop in a synagogue, but this new Alinco radio is downright cheap. And we mean *cheap!* The DX-77 is a well-credentialed all-band HF transceiver which offers good performance for a silly, silly price. So should the Big Three be worried?

Better grab the Geiger Counter! October's R&C is really radio active this month. Here's just a sample...

- **THE BATTLE CREEK SPECIAL:** We give complete construction details for a top-performing HF antenna.
- **REVIEW:** ASAPs for Windows Vers 4. A very special piece of Aussie propagation prediction software.
- **FUN WITH DTMF CHIPS:** You will not believe what you can do with a simple \$3 chip. Seven innovative circuits.
- **CONSTRUCTION:** Build a 2M Halo antenna. Another old trooper! The best antenna for mobile 2M SSB...
- **CONSTRUCTION:** Build an audio sine wave generator. Another super design from Harold, VK3AFQ.
- *As usual, we have our three DX columns and lots more... the best stories and regulars every month!*

Don't miss out — **RADIO and COMMUNICATIONS** is great reading for amateurs!
Check your local newsagent today!

(PS. We also have the biggest collection of radio-oriented Classified adverts in the country. There's lots of them because they work so well. Ask your newsagent to keep a copy for you each month, or ring 1800 25 2515 for subscription details. Hurry — you might miss something!)

WIA Divisions News

VK2 Notes

Councillors Visit Country Areas

As many of you are aware, this VK2 Council has made a point of Council Members visiting the Country Areas wherever possible.

During August, President Michael Corbin VK2YC spent a weekend in Albury where he represented the VK2 Council at the Field Day Dinner on the Saturday evening. On the Sunday he set up a stall at the Field Day with a selection of books from the Division Bookshop. He says sales were not as good as he had hoped but the opportunity to meet, and talk, with Amateurs from the area, quite apart from renewing many old acquaintances, was invaluable and a great pleasure.

Later in the month, Michael also attended the 30th Anniversary Celebrations for Wagga Amateur Radio Club which was, apparently, a huge success. So much so that, I believe, thoughts are already turning to a possible 40th Anniversary.

Other Members of Council have also been out and about with Vice President Brian VK2WBK representing Council at the Lismore Field Day (again with the Division Bookshop) and also the Regional Conference in Armidale. The author was the Council representative at the recent Southern Region Conference in Goulburn.

'That Tower' - Developments at Dural

President Michael and the author met with the Managing Director and Chief Engineer of Comsite (the new name for CSR) our tenants at Dural. The meeting, which took place at Dural, was the first meeting with CSR Management representatives since the infamous Court Case five years ago.

I am very pleased to report that the meeting, which continued over lunch, was very amicable with a number of decisions being mutually agreed. One major agreement is that Comsite will install a 70 cm antenna, of our choice, on their 200 ft tower.

The installation of antennas for the Division on the tower has always been part

of the formal agreement but, because of the problems earlier, has never been pursued. However, in this instance, they have not only agreed to install the antenna but, as a measure of their goodwill in the light of the spirit of co-operation now existing between Comsite and the WIA, have also offered to donate to the Division the heliastax necessary for the installation. When the Comsite Engineer asked the question "how high?", Michael raised his eyes to heaven, and the Engineer laughingly replied "OK, I get the message"!

This is the first major step, it is hoped, towards bringing to fruition a series of links on 70 cm to north, south and west, envisaged by members of Council.

Membership Drive

Our readers are urged please to take every opportunity to encourage non-member friends to join the WIA. At the present time the VK2 Division has a New Member prize which will be drawn at the AGM in April.

Every new member joining the VK2 Division before 26 March 1999 will automatically go into the draw. The prize is an ICOM 706 Mark II (covering HF, 6 m and 2 m, valued at about \$2300) kindly donated jointly by Icom Australia and Amateur Transceiver Radio Centre of Girraween, NSW.

Where do they get a Membership Application form? Every Affiliated Club now has a supply of Information Kits which includes the necessary forms, etc. Alternatively, simply ring the office on 02 9689 2417, or, if you are in Country NSW, ring our Toll Free number 1800 817644 and we'll be only too pleased to post one out.

Finally, have YOU renewed your membership? If not please do so as a matter of urgency - the WIA needs the support of every Amateur, and of course it ensures you will continue to receive *Amateur Radio* every month!

'Hot off the Press'

I have just been informed by Richard VK2SKY, the VK2 Webmaster, that at long last the WIA Web Pages can be accessed using the URL <http://www.wia.org.au/thanks> to the assistance of Mark VK2XGK.

Divisional Web pages can now be accessed using http://www.wia.org.au/vk*/ (where * is the Divisional number). I know that Richard has been aiming for this for quite some time. Well done, and thanks, Richard and Mark. By the way, Richard is also in the process of re-organising the Federal and VK2 Web pages. Check the new Site Index Page www.wia.org.au/SiteIndex.html.

Eric Fossey VK2EFY
Division Secretary

VK5 and VK8 Notes

Divisional Council

The passing of Don Christiansen VK5ADC has been announced with an obituary in *Silent Keys* in this month's magazine. Don will be missed from Council as well as for his various other contributions to the hobby of Amateur Radio. We now expect to co-opt someone else to Council; however, this matter has not yet been finalised.

Learning from Past History

It is fact that as time passes information becomes forgotten. New people come into the ranks not aware of matters of major importance. Those who are aware often do not pass details along to newcomers.

I thus introduce the subject of antenna installations for Amateur Radio in South Australia. We should note that regulations seem to vary greatly from state to state.

Within VK5 the situation is quite clear. I will put it in the simplest form possible and then elaborate to provide further guidance. Please note that this applies specifically to the erection of Amateur Radio antennas.

It is permissible to put up any structure to a height of 10 metres without having to apply for ANY permission.

If you wish to erect a structure with a height in excess of 10 metres you are required to submit a Building Application. This is usually done through your local Town or City Council. In connection with the application you must provide drawings depicting the proposed installation and engineering calculations to show that the installation is structurally sound.

THERE IS NO REQUIREMENT FOR ANY PLANNING PERMISSION FOR AMATEUR RADIO ANTENNAS IN THE STATE OF SOUTH AUSTRALIA.

You do not have to notify neighbours nor place advertisements in newspapers, etc stating what you intend. This also means that neighbours cannot make objections to your installation on such grounds as the tower, mast or antenna being unsightly.

I comment here that I believe we should do our best to make our antenna systems tidy in a general sense. I remember one Amateur Radio operator, upon whose behalf I interceded with a City Council, who had used bamboo canes as quad spreaders and had not bothered to cut off the curled ends of the spreaders. When I saw the installation I was somewhat aghast and could understand the concerns expressed regarding the appearance. It looked somewhat like an octopus gone wrong. The operator was co-operative and I was able to convince the Council that the

installation could be made acceptable in appearance.

You should provide plans which are clearly drawn and tidy. They should also be drawn to scale. You should show the supporting structure (mast or tower) as the main item. Details of guying and anchoring mechanisms should also be shown. Where you depict antennas I suggest that these be indicated as representative. Include a note (maybe even in small print) stating that the antenna as depicted is representative and subject to change from time to time.

If you have shown just one type of antenna without any additional comment you may find that your local council could later have good reason to object to what may be a larger antenna than originally indicated. I also suggest that the "antenna" need not necessarily be drawn to scale.

It could help if you included a photo-copy of the instruction booklet and assembly instructions for an antenna if you have such available. This would usually be the case with a commercially produced antenna and will give the local council engineer a better idea of what you intend.

To finalise these comments I provide a brief explanation of how it came about that the situation is so clear here in VK5.

Some years ago the late Bruce Bussenschutt (then VK5OR) had taken a great interest in the matter of erection of Amateur Radio antennas and relevant legislation. Bruce was a professional architect. He built up a comprehensive file on happenings in this area of interest (including obtaining details of many cases overseas) and helped quite a few operators in their approaches to City Councils.

Bruce's idea was to conceive a plan allowing us to take cases to higher courts to obtain favourable rulings regarding antenna installations. Eventually a case came to our notice that appeared to have suitable potential. In this instance the local government authority kept appealing against decisions in our favour. The matter, described by the judge as a "precedent" case, was settled in our favour in the Supreme Court before Mr Justice Wells and described as the "City of Noarlunga vs B Usher."

I will not try in these notes to detail the background of the case and the basis for decisions made by Mr Justice Wells. Suffice to say, if you run into any difficulties obtaining approval, you should refer to this decision as proving your right in law to be able to erect an antenna for Amateur Radio purposes.

I trust that this information will be useful to members of the VK5 Division and available as a reference for the future. It is difficult to provide such information on a

continuing basis. It may also be helpful for people in other states to be aware of the South Australian Supreme Court finding in the eventuality that it could carry some weight in other instances.

An article appeared in *Amateur Radio* magazine, February 1982 issue, entitled "Towers and the Law". That article provides more detail regarding the background of the case (whilst written by me the article was somehow attributed to John Ingham VK5KG who at that time was our Federal Videotape Co-ordinator).

October General Meeting

The October General Meeting of the Division to be held on Tuesday, 27 October will take the form of a display of members' Home Built Equipment and will include the annual competition for the Merv Millar Award for the best home-brew item displayed. I suggest that you get your best projects on the way and bring the resulting items along to that particular evening.

Burley Griffin Building (BGB)

At the time of compilation of these notes negotiations are in hand regarding our occupancy of the BGB. The outlook appears promising and a final result is expected soon. There should be more news regarding this in the next issue of *Amateur Radio*.

Ian J Hunt VK5QX
Divisional President

"QRM" News — VK7 Notes

Council Meeting

Our bi-monthly State Council meeting was held on Saturday, 12 September at Penguin with an excellent attendance. We encourage members outside the Council to come along and join in the discussions but with, of course, no voting rights. These members often see things slightly differently to the Council members and their input is really appreciated.

Our three branches take it in turns to host these meetings; in November it's the Southern branch's turn. Our ex-officio members responsible for various aspects of our organisation helped to make it a very fruitful meeting.

The meeting stood in silence as a mark of respect and in memory of three of our number who are no longer with us, life member Peter Frith VK7PF, Bob Jackson VK7NBF, and Lloyd Chappell VK7LC.

Finances

The finances are in a sound condition thanks to the attention of our Treasurer, John Klop

VK7KCC, and his predecessor Terry Ives VK7ZTI. There are lots of things we could do for our members, however, if only we were allowed to print money.

FTAC Report

Tony Bedelph VK7AX

Approval has been given for two portable WICEN repeaters for the south of the State. Frequencies are 145.850 MHz (600 kHz offset) and 439.975 MHz with a 5 MHz offset.

The packet digipeater on Mt Barrow, previously VK7RTY, is now licensed under the common licence of VK7RAA, thus saving one fee.

The Southern branch has been given approval to change its beacon frequency from 52.37 to 50.297 MHz. Will all you chaps on the island up north who use our just brilliant beacons, please note this.

We are still cursed with a channel 5A television channel on the north-west coast and every time print comes on the TV screen out goes our packet digipeater. VERY frustrating but how do you get the ABA/ACA to do something about it? We can't.

Awards and QSL Report

John Bates

Only one Tassy Devil award was given out these past two months, but to Stan Seiffort W7AWA in Seattle for 160 metre CW/SSB contacts. Quite an achievement!

With propagation improvement, QSL cards are becoming numerous but we still have cost problems with small volume countries. We also still have problems with some of our amateurs who refuse to accept their cards or return one. This, we feel, does nothing for the state's image overseas.

Web Site

Co-ordinator Robert McKenzie VK7RB

Have you visited our Tassy site yet and signed our guest-book? If not, why not? It's definitely worth a look, and it's updated each week. We are pleased that the site wia.org.au is now in Federal hands and we hope all State sites will be linked to it soon.

Yes. Tassy is alive and going well. We hope we can keep it that way!

Ron Churcher VK7RN

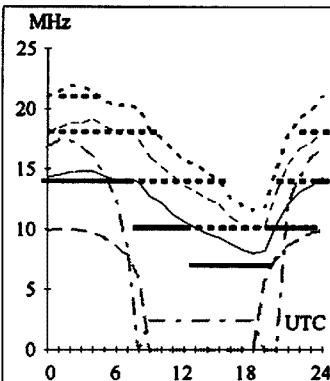
ar

WIA Call Book 99

**Every active radio
amateur needs one for
the shack and one for
the car!**

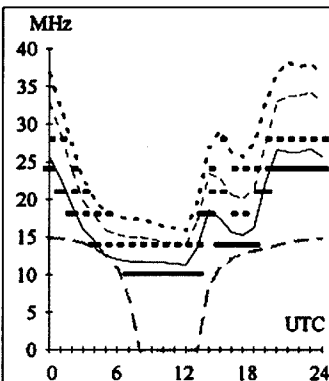
Adelaide-Auckland 104

Second 2F13-20 2E2 Short 3240 km



Brisbane-Chicago 57

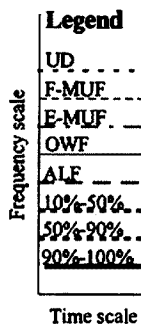
First F 0-5 Short 14360 km



October

1998

T index: 98



HF Predictions

Evan Jarman VK3ANI

34 Alandale Court, Blackburn VIC 3130

These graphs show the predicted diurnal variation in key frequencies for the nominated circuits.

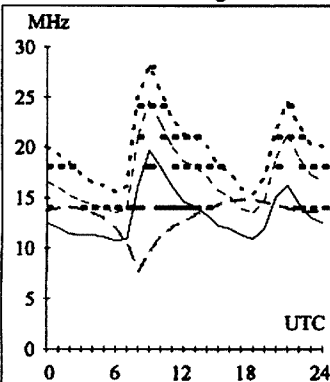
The frequencies, identified in the legend, are:

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

Also shown hourly are the highest frequency amateur bands in ranges between these key frequencies; when useable. The predictions were made with the Ionospheric Prediction Service program ASAPS version 4. The path, propagation mode and Australian terminal bearing are also given for each circuit.

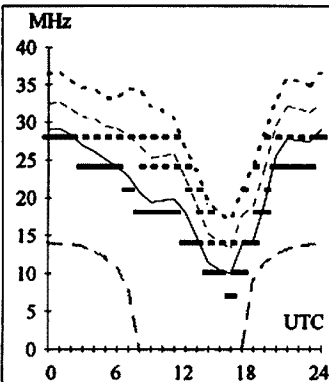
Adelaide-London 132

First F 0-5 Long 23755 km



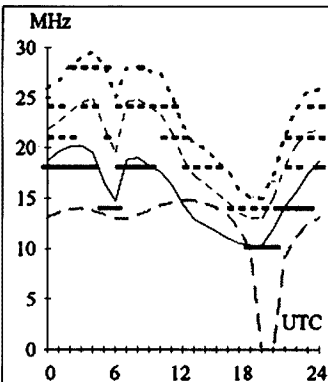
Brisbane-Honolulu 49

Second 3F5-11 3E0 Short 7569 km



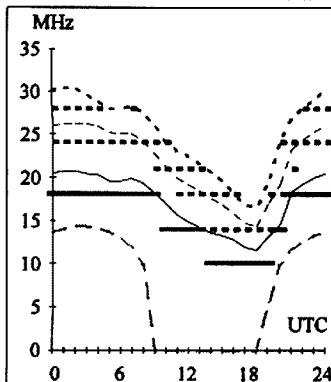
Canberra-Dakar 214

First F 0-5 Short 17361 km



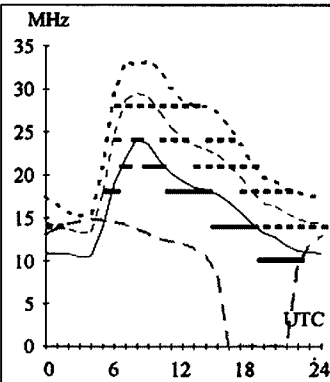
Darwin-Christchurch 139

First 2F5-8 2E0 Short 5281 km



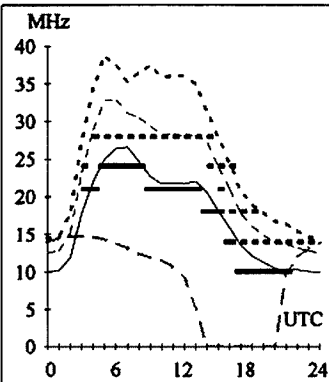
Adelaide-London 312

First F 0-5 Short 16269 km



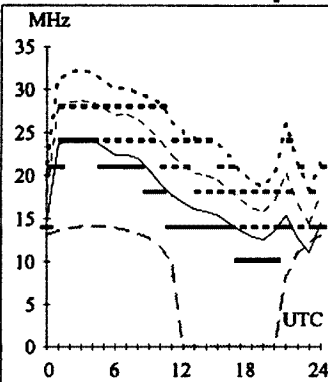
Brisbane-Moscow 321

First F 0-5 Short 14071 km



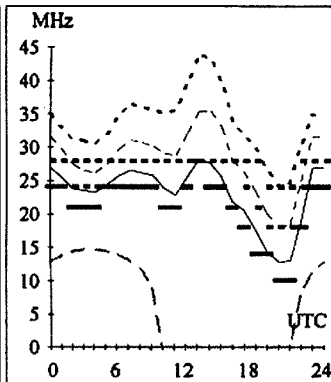
Canberra-New Delhi 303

Second 4F5-11 4E0 Short 10348 km



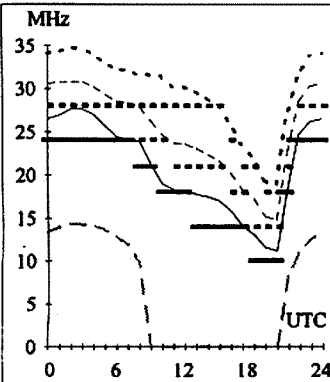
Darwin-Manila 340

First 1F1-10 1E0 Short 3198 km



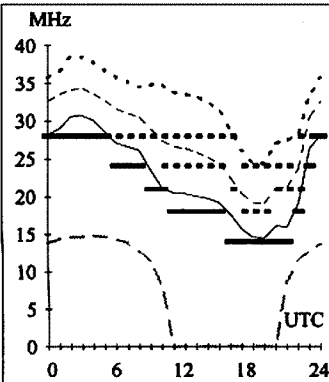
Adelaide-Tokyo 1

Second 3F5-11 3E0 Short 7855 km



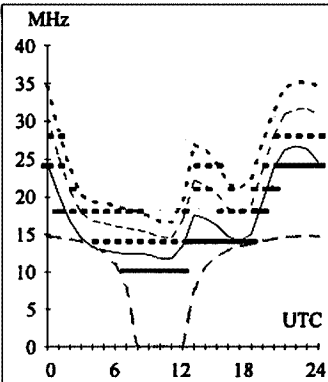
Brisbane-Singapore 293

First 2F2-6 2E0 Short 6147 km



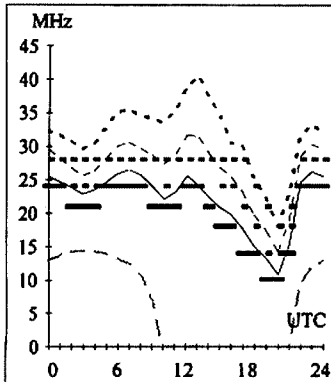
Canberra-Washington 70

First F 0-5 Short 15939 km



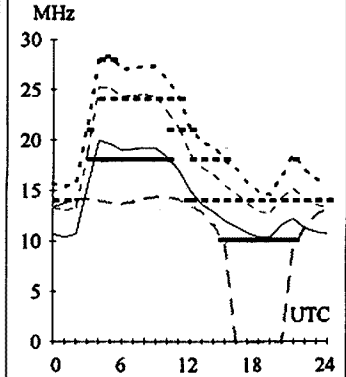
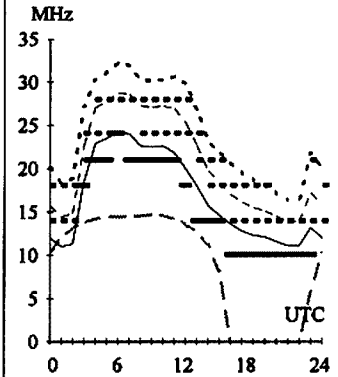
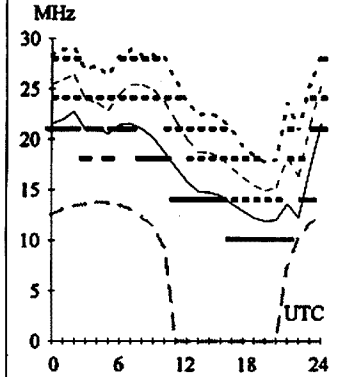
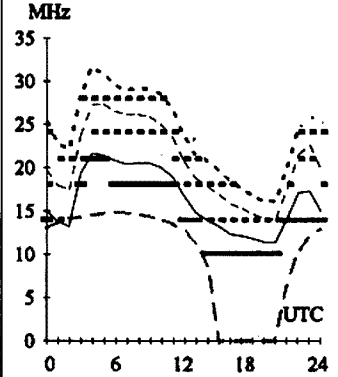
Darwin-Osaka 5

First 2F4-12 2E0 Short 5263 km



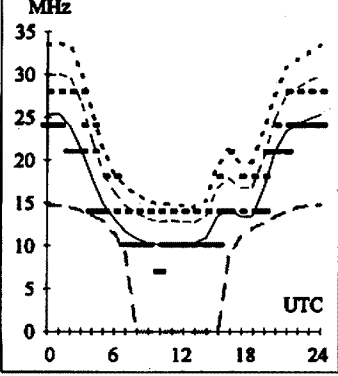
Hobart-Amman 283 **Melbourne-Bangkok** 312 **Perth-Harare** 257 **Sydney-Johannesburg** 230

First F 0-5 Short 14003 km Second 3F6-13 3E0 Short 7372 km First 3F3-7 3E0 Short 8496 km Second 4F4-9 4E0 Short 11035 km



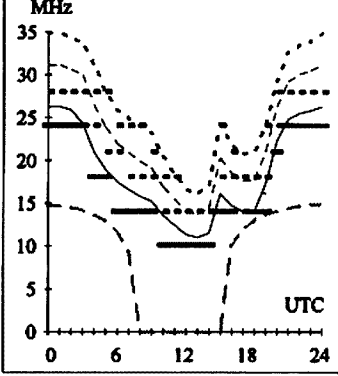
Hobart-Calgary 51

First F 0-5 Short 14087 km



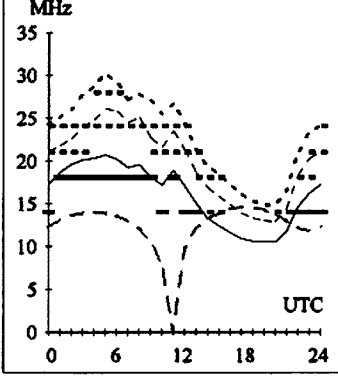
Melbourne-Los Angeles 65

First F 0-5 Short 12772 km



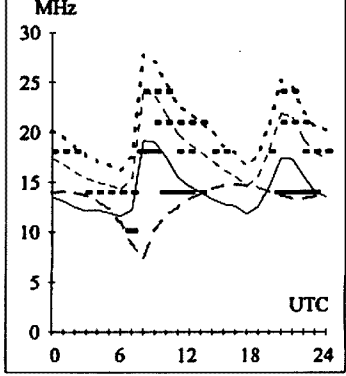
Perth-Lima 162

First F 0-5 Short 14931 km



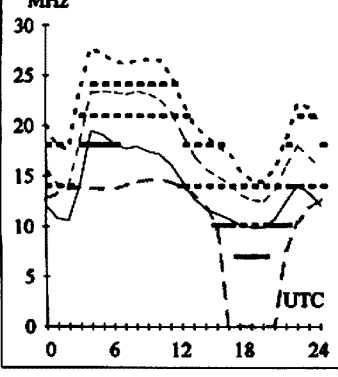
Sydney-London 139

First F 0-5 Long 23032 km



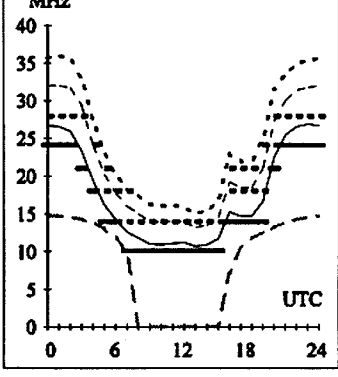
Hobart-Lusaka 239

Second 4F4-8 4E0 Short 11045 km



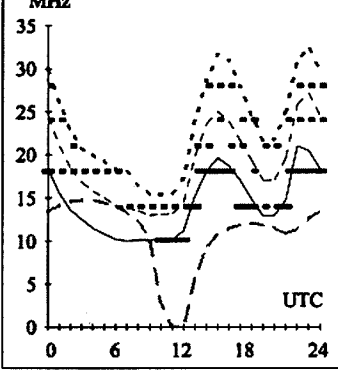
Melbourne-Seattle 50

First F 0-5 Short 13180 km



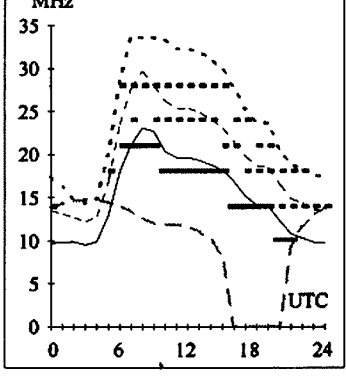
Perth-Ottawa 30

First F 0-5 Short 18212 km



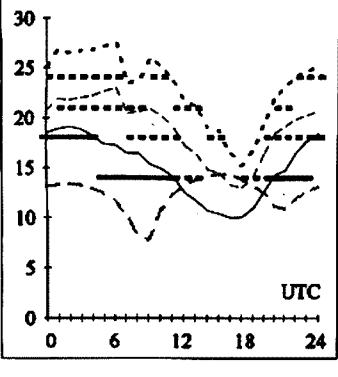
Sydney-London 319

First F 0-5 Short 16992 km



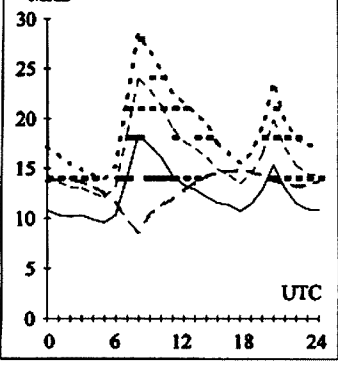
Hobart-Rio de Janeiro 169

First F 0-5 Short 12619 km



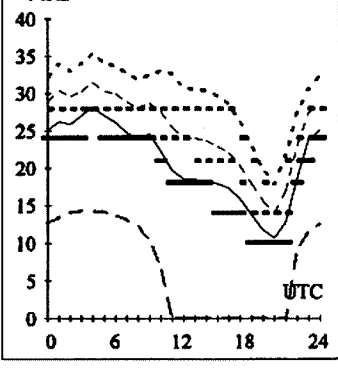
Melbourne-Stockholm 140

First F 0-5 Long 24424 km



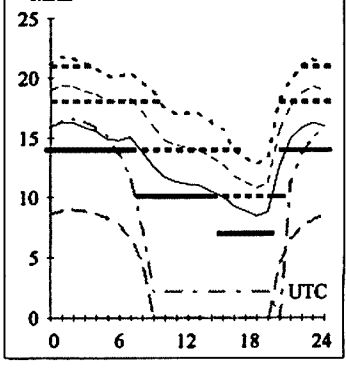
Perth-Tokyo 20

Second 3F4-11 3E0 Short 7923 km



Sydney-Port Moresby 351

Second 2F17-24 2E4 Short 2740 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

Postal: 3 Tamar Court, Mentone VIC 3194

Fax: 03 9584 8928

E-mail: vk3br@c031.aone.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX** programs for IBM XT/ATs *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.
- **HAM LOG v.3.1** - Acclaimed internationally as the best IBM logging program. Review samples....AR: "Recommend it to anyone". The Canadian Amateur: "Beyond this reviewer's ability to do it justice. I cannot find anything to improve on. A breakthrough of computer technology". ARA: "Brilliant". Simple to use with full help, the professional HAM LOG is immensely popular (now in its 5th year), with many useful, superb features. Just \$59 (+ \$5 P & P), with a 90 page manual. Special 5 hour Internet offer. Demos, brochures available. Robin Gandevia VK2VN, 02 369 2008 BH, fax 02 369 3069. Internet address rhg@ozemail.com.au.

FOR SALE ACT

- **Hewlett Packard 5245L** 50 MHz counter with 5257A 0.05 - 18 GHz plug-in, \$345. **Heathkit HM-102** power/SWR meter and **HN-31** 1 kW dummy RF load, \$50 each. Ed VK1VP, QTHR, 02 6249 6348.

FOR SALE NSW

- **Hyundai HSS-100C** digital satellite receiver, 6 months old, as new, latest version, \$500. Ernest VK2BED, 02 9532 0175.
- **Clearance Sale!** **Kenwood TR-751** 2 m txcvr with SSB, \$550 ONO. **Brother M1709** printer, takes paper to 16 inch width, \$50. **GME PSU 35 amp peak**, \$300. **Kyokuto 144 10SXR11** 2 m txcvr, dent on case, excellent working order, \$200. **25 ft tower**, galvanised with 10 ft extension tube, \$100 ONO. Charlie VK2NAJ, QTHR, 02 9604 7454.
- **Telescopic tower**, 6 m - 10 m 200 mm triangular section, winch and cable, base hinge, bracket, \$300. R B Mackie VK2EJU, 02 6553 1365.
- **Yaesu FT7** with PSU, Morse key, SWR bridge, mobile antennas, mic, manual, excellent order, \$350 the lot. David VK2BDT, Goulburn, 02 4821 5036.
- **Icom IC-2GAT**, mint condn, boxed, all accessories, carry case, \$435 ONO. **Icom IC-275A** base station, s/n 001716, AC/DC operation, excellent condn, boxed, all accessories, never used. **Icom IC-475A** base station, s/n 01045, AC/DC operation, excellent condn, boxed, all accessories, never used. Sell both together for \$2500, or separate for \$1400 each ONO. Stephen VK2SPS, 02 4334 7743.
- **3 element monoband antenna** with gamma match for 18 and 21 MHz, use for either band, excellent condn, \$145 plus postage. J R Thurston VK2KV, 02 4787 7003.
- **Satellite dish offset 90 cm** complete with LNA (new) feed horn and double polarity polariser, KU band. **Mod DT400** digital receiver, new, box and

instructions, ready for immediate use, \$630 the lot, will split. Peter VK2BPO, QTHR, 02 9713 1831.

- **Singer FM10CS** test set, complete with AM and FM plug-in modules, operator's manual, maintenance manual, \$600. **Trio CD-1303D** oscilloscope, s/n 454463, \$200. **Akai** reel-to-reel tape recorder, s/n 02339, \$50. **Yaesu FT-101** SSB txcvr, s/n 16466, \$200. **Star SR-550** ham band rxcvr, s/n 71658, \$50. **UHF filters**, 400 - 490 MHz, tuned line, solid brass gold plated, used for making diplexers, etc. \$20 each. **Crystal calibrator No 10**, \$20. **AVO VTVM**, \$20. Ray VK2FW, 02 6365 3419 (mornings).

FOR SALE VIC

- **Icom IC-25A** 2 m txcvr, s/n 21614. **Icom IC-R70** rxcvr, 100 kHz to 30 MHz, s/n 18058492. Working instructions and circuit diagrams supplied for both units, some options included, further information from K P Richards VK3CKK, 03 9729 1624.
- **Fluke 8810A** digital multimeter, batt or AC, \$80. **Command BC-456-B** rxcvr, 3-6 MHz, with dynamotor, no mods, \$130. **Command BC-496A** control box for 2 rxcvrs, new, \$80. **Command FT-234A** rack for one tx, new, \$40. Will trade some or all for military or avionic equipment. Peter VK3IZ, 03 5156 2053, jupeter@net-tech.com.au.
- **Nally tower**, heavy duty, on the ground and ready to remove, equipped with 5 to 1 reduction winch for tilt-over, 2 to 1 reduction for vertical raise, near-new heavy duty wire cables, \$500. Jack VK3SP, QTHR, 03 9842 1841.

FOR SALE QLD

- **Kenwood TS-520, DG5** remote VFO, connecting cables, good condn, spare set final and driver tubes, will not separate, \$600. M T Deakin VK4DV, QTHR, 07 4933 2646 (evenings).
- **Butternut HF5B** Butterfly Beam, 20, 17, 15, 12 and 10 metres, \$200. **B&W dipole**, 78' long, 80, 40, 20 metres, \$100. **Kenwood internal automatic ATU** for TS-690S/TS-450S, \$200. **Kantronics KPC-3**, \$80. **Encyclopaedia Britannica** on CD, 1999, \$100. Dick VK4DIC, 07 3264 1655.
- **Kenwood TS-690S**, HF + 6 m, ATU, PS-50 PSU. MC-60 mic, original handheld mic, manual, box, good condn, \$1800. Licensed amateur only. S Bertolone VK4II, 07 3343 1961.
- **Icom IC-740** HF txcvr, in excellent operating order and appearance, with two VFOs, passband tuning, notch filter, RIT/XIT, memories on all bands, good reports on transmissions on all bands, sensitive receiver, copy of spec sheet available, \$590. **0-250 V/1.8 A** variable auto-transformer, unused, very useful for workshop and experimental use, \$55. VK4SZ, QTHR. 07 4061 3286, johnb@comnorth.com.au
- **Rohde & Schwarz** signal generator SMS, 0.1 - 520 MHz, precision instrument, programmable with digital readouts for RF freq, Mod, % or deviation and RF output level, manual included, \$745. **AWA RT-85**, 2 m FM mobile, remote head, 25/5 watts, programmed with 64 channels of popular repeater, packet and simplex frequencies, auxiliary packet connector, frequency chart, technical information,

\$95. Eric VK4NEF, QTHR, 07 3353 1695 or esr@powerup.com.au.

● **Racal Dana 9008M modulation meter**, AM/FM, 8 ranges, AF filters, 240 V AC, GC, \$120. Gary VK4AR, 07 3353 1695.

FOR SALE SA

● **Uniden HR-2510** 10 m txcvr, s/n 05000194, VGC, \$280. **Digitor 2 m 30 W amplifier** with receive pre-amp, as new, \$80. Both items in original boxes. Mark VK5KMK, QTHR, 08 8836 7279.

● **Deceased estate. Icom IC751 HF txcvr**, s/n 05139, \$700. **Icom PS-30 PSU**, s/n 02955, \$170. **Tono H 5000E modem**, s/n 531918a, \$100. **Kenwood SM-220 monitor**, s/n 4040195, \$150. **Heil BM-10 headset/mic**, \$95. Contact Jim VK5NB, 08 8294 2992, jmac@cobweb.com.au

● **Icom IC-720A HF txcvr**, s/n 03317, \$600. **IC PS-30 PSU**, s/n 02955, \$170. **Yaesu FT-101B HF txcvr**, s/n 1010345, new tubes fitted, \$250. **Two only 6JS6**, new, \$40 each. **Two only 6BL6**, new, \$40 each. Jim McLachlan, 08 8294 2992, jmac@cobweb.com.au

● **Icom IC-505 6 m SSB FM txcvr**, \$295. **Hy-Gain Hytower**, 160-10 m vertical tower, no traps, \$80. **Kenwood AT-230 ATU**, as new, \$200. Gary, 08 8396 6706 (AH), 0419 815 479 (BH).

● **Kenwood TS-50**, excellent condn, with extras, \$1400. **Kenwood TS-130S HF txcvr**, AT-130 ATU, external TS-120 VFO, MC-50 desk mic, mobile bracket, service manual, all other manuals, excellent condn, \$830. Lots more radio equipment for sale. Paul VK5MAP, QTHR, phone/fax 08 8651 2398.

FOR SALE TAS

● **Yaesu GL-2100** linear amplifier, 1200 W PEP, grounded grid, 80 - 10 m, pair 572B tubes, auto level control, 41 lbs, 240 V 9 A, \$600. D Baldwin VK7DA, QTHR, 03 6229 6538.

● **85 ft approved tilt over mast** with three element full size 20 m beam, magnificent radio location just 30 mins north from Launceston, plus 20 sq superior home on 30 acres with airstrip and hangar, outbuildings including shearing shed, etc, \$270,000. Erik VK7AAB, 03 6383 1675

● **Kenwood TL-922** linear amplifier, \$2000 ONO. **Tono 5000** communications terminal, CW, RTTY, AMTOR, \$550 ONO. Richard VK7RO, 03 6227 8974.

WANTED ACT

● **Dual directional couplers**, 1 GHz and up. **Drake R7 receiver manual/circuit**. Ed VK1VP, QTHR, 02 6249 6348.

● **Wanted urgently Yaesu FT-747 workshop manual**, will pay all costs. Tex VK1TX, 02 6296 2508, vk1tx@bigpond.com

WANTED NSW

● **Heavy, old, unloved receivers (parts or junkers)**, for listener and budding restorer, no one has given me a hernia yet (come close), will pay dollars if you want. Also will be at Wyong Field Day, Sunday 28 February, with an empty trailer! Will also be at the Castle Hill military radio display stand, with commens receivers display. John L21068, 02 9533 6261.

● **Carphone, converted for 6 m**, remote head, xtal type RT80, FM828, FM92, etc. Richard VK2XRC, 02 9665 9680.

● **Yaesu FT-102 mains power transformer**, or junked FT-102. **Yaesu FT-707 digital readout board**, or junked FT-707. Errol VK2BET, QTHR, 02 9476 2933, 015 952 930.

Club News

Melbourne Packet Radio Group Inc

This month we present details of three Melbourne based DX Clusters. The Cluster network consists of three CLX Linux DX Clusters running CLX version 4, as follows:

1. **VK3BBS-4 DX Cluster**; sysop Peter VK3AVE; run by the Melbourne Packet Radio Group Inc; Netrom Alias BBSDXC; callsign VK3BBS-4; frequencies 146.600 MHz via VK3RPS-2, 434.050 MHz via VK3RPS-7, 147.575 MHz via VK3RMU-2, 144.750 MHz direct, and 147.550 MHz direct.

2. **VK3FRS-4 DX Cluster**; sysop Roger VK3FRS; Netrom Alias FRSDXC; callsign VK3FRS-4; frequencies 144.775 MHz direct, and 434.250 MHz direct.

3. **VK3JNJ-4 DX Cluster**; sysop Matt VK3JNJ; Netrom Alias JNJDXC; callsign VK3JNJ-4; frequency 144.975 MHz direct.

The clusters are linked to the international DX network via the following locations:

1. VK4CJO DX Cluster in Brisbane;
2. AC4ET DX Cluster in USA;
3. WU3V DX Cluster in USA;
4. VE7CDQ DX Cluster in Canada;
5. PA3GOJ DX Cluster in The Netherlands;
6. PP5BLU DX Cluster in Brazil;
7. IR5PWJ DX Cluster in Italy;
8. JE3YEK DX Cluster in Japan; and
9. K4UGA DX Cluster in USA.

WANTED VIC

● **QEX magazine**, all issues from March 1982 to December 1987, January to September 1988, all 1993, August to December 1995, will buy complete sets if necessary. Richard VK3ZCL, 03 9571 4065, rgipps@netspace.net.au

● **Avionic control boxes and Tx/Rx for ARC-4. Control box for 51-X1 Rx, 51-Y3 ADF, ARC-60 and any other associated equipment or manuals.** Peter VK3IZ, 03 5156 2053, jupiter@net-tech.com.au.

● **Eilco portable transceiver type 6104 circuit and service manual**, will pay copy and postage charges. J D Patterson VK3ATQ, QTHR, 03 5944 4511.

WANTED QLD

● **10 and 15 m lightweight beam, rotator to suit.** Unused 6146 valves. Len VK4JZ, QTHR, 07 5485 3324.

VK3BBS welcomes more links from DX Clusters, especially any in VK, as there is no Australian DX Cluster Network. If you wish to link to the VK3BBS DX cluster, contact Peter at VK3AVE@VK3BBS.#MEL.VIC.AUS.OC.

The next meeting of the Group will be at 1930 hrs on Monday, 12 October at the Moorabbin and District Radio Club rooms, Turner Road, Highett in Victoria (Melways 77 J9). All are welcome. Enquiries should be addressed to MPRGi, PO Box 299, St Albans, VIC 3021 or via packet to MPRGCM@VK3BBS.#MEL.VIC.AUS.OC. Peter McEwen VK3FEE

Moorabbin and District ARC - VK3APC

Meetings are held at 8.00 pm on the first and third Fridays of each month. While the third Friday meeting is a formal meeting with reports, etc, the first Friday meeting is an informal natter night.

All interested persons, members and non-members, licensed or simply listeners and experimenters are invited and encouraged to attend these meetings.

An informal get-together with refreshments is held every Tuesday morning at 10.00 am, continuing the tradition started about twenty years ago. Everyone is welcome to join us at the Club rooms in Turner Road, Highett.

The Club weekly award nets are active every Monday evening. The VHF net is at 7.30 pm on 146.550 MHz, followed by the HF net at 8.00 pm on 3567 kHz +/- QRM (all times are local).

A newly designed award certificate will soon be issued. Details will be available from Paul VK3ALE, the Club secretary.

All correspondence for the Club should be addressed to: The Secretary, PO Box 58, Highett VIC 3190.

Ken Bridger VK3JII

Publicity Officer

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WANTED SA

● **Yaesu FT-1000 or Icom IC-765 or Kenwood TS-950 HF txcvr. FAS-4 remote antenna switch.** Gary, 08 8396 6706 (AH), 0419 815 479 (BH).

MISCELLANEOUS

● **The WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

● **If you got your licence before 1973 you are invited to join the Radio Amateurs Old Timers Club.** A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

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WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Hugh Blemings Secretary John Woolner Treasurer Les Davey	VK1YYZ VK1ET VK1LD	3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 6.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup , and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00) Web: http://marconi.mpcos.mq.edu.au/wia e-mail address: vk2wi@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz	VK2YC VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.170, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1273.500 (* morning only) with relays to some of 18.120, 21.170, 581.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$88.00 (G) (S) \$58.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 (PO Box 9261 Fax 03 9885 9298	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au Web: http://www.tbsa.com.au/~wia/vic/	VK3PC VK3XV VK3NC	VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 3221 9377	President Colin Gladstone Secretary Peter Harding Treasurer Alistair Eirick e-mail: secretary@wiaq.powerup.com.au Web: http://www.wiaq.powerup.com.au	VK4ACG VK4JPH VK4FTL	1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Ian Hunt Assistant Secretary Graham Wiseman Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/	VK5QX VK5EU VK5UJ	1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	Acting President Cliff Bastin Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	VK6LZ VK6ZLZ VK6OO	146.700 FM(R), 438.525 FM(R), 29.120 FM at 0930 and 1900 hrs Sundays from Perth, relayed (morning only) on 1.825, 3.560, 3.582 (Busselton), 7.075, 14.116 (North), 14.175 (East), 21.185, 50.150; (morning and evening) 146.900(R) Mt William (Bunbury), 147.00(R) Katanning, 147.200(R) Cataby, 147.250(R) Mt Saddleback (Boddington), and 147.350(R) Busselton; (evening only) 1.865, 3.564 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division 24 Targett Street Scamander TAS 7250 Phone 03 6372 5305	President Ron Churcher Secretary Paul Godden Treasurer John Klop Web: http://www.wia.tasnet.net e-mail: vk7kpg@hamnet.hotnet.com.au	VK7RN VK7KPG VK7KCC	146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz). Note: All times are local. All frequencies MHz.				

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Besides being a fully-featured dual-band amateur transceiver, the VX-1R has extraordinarily wide receiver frequency coverage; you'll also be pleasantly surprised by the great audio on the FM broadcast band. A dual-watch facility is provided – and together with the AM, FM-narrow and FM-wide reception modes – you'll be having fun even when you're not operating on the amateur bands. For selective calling and listening, the VX-1R also includes a CTCSS encoder/decoder and a 104-code Digital Code Squelch (DCS) system as well as a Tone Search facility for both CTCSS and DCS encoded transmissions.

A great range of accessory lines for the VX-1R are available such as speaker/mics, a carry case, as well as a battery holder for 1 x AA alkaline battery which includes an inbuilt voltage step-up converter. Computer programming of the VX-1R is available via the optional ADMS-ID programming kit.

So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

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Amateur Radio



November 1998

Volume 66 No 11

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

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- A J-Pole Antenna for Two Metres, by Drew VK3XU
- Harry Angel VK4HA Silent Key

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Cover Dot VK4DDB and her son Peter VK2HCU. Dot is Editor of the ALARA Newsletter and, with Peter's help has put an ALARA home page (seen on the monitor screen) on the Internet. When he finishes the HSC, Peter intends to get his full call.

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from *W. Roper and Associates Pty Ltd* on receipt of a stamped, self addressed envelope.

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PHOTOSTAT COPIES

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Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Viewpoint

Editor's Comment

Do We Have a Future?

This is mainly aimed at amateurs who know about the Wireless Institute of Australia in a "second-hand" way but don't actually belong to it.

The people I hope will see it may be fairly young, and probably have some interest in a local radio club if not actually club members. But they are not now members of the WIA, although once they may have been. We now urgently need them to join or rejoin, or there may no longer BE a WIA to belong to!

The reason is simple; the outgo exceeds the income!

Whereas just over 10 years ago we had over 8000 members, now we have barely 4000. Subscription income is therefore virtually only half of its former amount, but costs remain much the same, almost independent of the number of members.

The question is now being asked whether we can afford any longer to produce this magazine, 66 years after it began!

The WIA is not the only organisation with magazine and membership problems. The *Australian Chess Magazine* ceased production at the end of 1997. It had lasted for 75 years, sometimes with the support of all States; but finally only NSW remained a contributor. Chess has something like two million players in Australia, but does not need Federal representation to Government in the way that amateur radio does.

The Chess Federation costs per member should thus be much less than ours. Yet they could no longer support a national magazine. Do we want to go the same way?

Amateur Radio is the best way for members and Council to keep each other informed. State or Club newsletters cannot be as effective, particularly outside their own borders.

The suggestion has been made more than once that a possible solution is for *Amateur Radio* to be incorporated into a commercial magazine. But commercial magazines also have their problems in the market place, and such a move might be out of the well-known frying pan into the fatal fire!

So, we come back to the present situation. Do we need our magazine *Amateur Radio*? If so, we can only continue by increasing the number of members of the WIA. A sufficient increase in membership would even permit reduction of subscriptions.

A 10% increase in numbers at present fees would probably overcome the problem. But if our membership drops further we may go the same way as the *Australian Chess Magazine*.

Only YOU can avoid this fate, by enlisting new members or convincing "drop-outs" to rejoin.

Let's do it!

Bill Rice VK3ABP
Editor

PS. I thank Peter Parker VK3YE (ex VK1PK) for referring me to the final issue of the *Australian Chess Magazine*.

ar

■ WIA Comment

From the President

Following on from the theme in my report to you in last month's *Amateur Radio* magazine, I am pleased to say that I am finding in my conversations with fellow radio amateurs in Australia an awareness of the challenges facing our hobby and a strong desire to preserve our privileges against the commercial forces.

I am often asked, "Why do people belong to the WIA?"

The answer depends on the view point of the member. For most it is because they feel a genuine desire to belong and to be proud of their support of the national body. For some, perhaps the more mercenary ones, it is because it provides a monthly magazine and access to a QSL bureau. For a few, the answer is because

without the WIA our precious privileges will not survive the onslaught from outside interests.

All of these answers are correct. But it is in the national and overseas representative areas that the Federal WIA body is most essential. Without a voice to the Australian government agencies and the International Organisations, the radio amateur will be forgotten in the grab for spectrum. As you can imagine, this is a most expensive service to provide for members with the need for expert technical negotiators to attend meetings both at home and overseas.

In the past week a draft business plan prepared within the WIA Federal Executive has been released to the Federal Council and to the Presidents of the seven

State Divisions for review by them. It is intended as a necessary first step to strengthening the financial integrity of the Federal body and so ensuring the future of those members' services that are provided by WIA Federal.

By itself, this business plan is not a magic cure to financial ills but will position the Executive and Council to enable the best decisions to be made.

The WIA has the ability and access to the skills needed to meet the challenges. However, it can only succeed if it has the financial resources to fund the various tasks involved. Our principal source of funding is from members' subscriptions and it is clear that we need an increase in the current membership levels if we are to be able to maintain and subsequently expand the membership services desired by our members. Together we must succeed in encouraging more of those who engage in amateur radio to join us in being members of the WIA.

Let's all make this a primary objective!

Peter Naish VK2BPN
WIA Federal President

ar

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

Amateur Radio Operators and the Olympic Games

The following information provides advice to licensed Amateur radio operators on the temporary operation of the Olympic Radio Network (ORN).

The Sydney 2000 Olympic and Paralympic Games (the Games) will be a hallmark event. The task before SOCOG is a challenging and confronting one, particularly because the expectations of the nation and the world are naturally very high. It is an overriding national intention to create an efficient and effective Games - 'the best ever' - and the willing support of the Amateur radio operators community is critical in achieving that goal.

The Australian Communications Authority (ACA) recently convened two meetings with the key stakeholders to discuss details concerning the ORN project.

These meetings were attended by Peter Naish, the Federal President of the Wireless Institute of Australia (WIA); Michael Corbin, President of the VK2 Division; John Innes, who provided technical support on the WIA's behalf; and representatives from Telstra, the Sydney Organising Committee for the Olympic Games (SOCOG), the Department of Defence, and the Australian Communications Authority (ACA).

The spirit of co-operation that has characterised the work on the ORN to

date, places the project in great stead, and is a credit to all participants concerned.

The principal focus of the meetings has been to develop radio frequency arrangements that will enable a high quality ORN with minimum negative impact.

An important focus has been to ensure that any inconvenience caused to Amateurs due to the operation of the ORN within the range 421 MHz to 432 MHz is minimised. Both the Department of Defence and the ACA have confirmed that the ORN will cease operation on 31 December 2000.

The ORN will be a distinct trunked radio network especially created to support the staging of the Games. Telstra has been contracted to implement the ORN and is now planning the installation and support of the network on behalf of SOCOG.

SOCOG has selected a trunked land mobile system using Motorola's 'Astro' as the basis of the network. Astro is a four level FM QPSK digital trunked land mobile technology closely related to Motorola's Smartzone trunking system. Smartzone is a proven technology already

providing the basis of the NSW Government Radio Network (GRN).

In order to adequately service the administrative, command, control and other functions central to the staging of the Games, the ORN will require a capacity of at least 200 channels.

Provisional planning and modelling is still being performed to determine exact channel limits; however, the following arrangements are likely to be close to the final operating arrangements for the ORN:

- It will be in operation for the period 31 March 1999 to 31 December 2000 to accommodate the period of the Games and the extensive SOCOG lead up test event schedule.

- Location of the ORN is expected to be confined to the Sydney basin.

- The spectrum to be used is bounded within the following frequency limits derived from +/- 6.25 kHz from the lower and upper channels planned:

- * Base receive 421.00625 MHz to 421.98125 MHz, paired with base transmit 428.06875 MHz to 429.04375 MHz, with a transmit/receive split of 7.0625 MHz.

- * Base receive 424.00625 MHz to 426.81875 MHz, paired with base transmit 429.08125 MHz to 431.89375 MHz, with a transmit/receive split of 5.075 MHz.

- Three blocks of frequencies will be used within the ORN. On any particular radio site, only channels from within the same block will be in use. This arrangement ensures that intermodulation products up to the 7th order are avoided in all blocks. However, in one of the blocks, up to 15th order intermodulation products will be avoided.

- Channel width will be 12.5 kHz.

While Telstra has yet to confirm formally that the ORN will be limited to use within the Sydney basin, they are hopeful that SOCOG's communication needs at interstate venues can be serviced from within the existing communications infrastructure at these locations. Telstra will provide further advice on this matter in the near future.

The Motorola Astro equipment to be used for the ORN is fully programmable over the range 403 MHz to 433 MHz, and the handheld and base transceivers can all transmit and receive on any

channel in that range. The transmit/receive sense of the ORN has also been chosen to further minimise the potential for interference.

Motorola's Astro equipment is available in three frequency ranges, 403 MHz to 433 MHz; 439 MHz to 470 MHz; and 450 MHz to 489 MHz. Of these three ranges, the range 403 MHz to 433 MHz is considered most suitable for operation of the ORN because the equipment can be retuned for GRN use after the Games are over. Within this range the segments below 420 MHz are already substantially occupied in Sydney by the GRN and other services. Therefore, the only viable spectrum that will support the 200 channels or more required for the ORN is the upper range from 420 MHz to 433 MHz.

In order to accommodate the Games in the range 420 MHz to 430 MHz, some changes need to be made to the Australian Radiofrequency Spectrum Plan (ARSP).

In order to accommodate the Games in the range 420 MHz to 430 MHz, some changes need to be made to the Australian Radiofrequency Spectrum Plan (ARSP). Presently, land mobile services are allocated spectrum in the segment 420 MHz to 430 MHz on a Secondary basis, but no allocation currently exists for these services in the segment 430 MHz to 440 MHz in the ARSP.

It is proposed that a suitable allocation will be made in the range from 421 MHz to 432 MHz to enable the operation of Land Mobile and Fixed services on a Primary basis for the preparation and staging of the Games.

A new draft of the ARSP, which will include this new allocation, will be available for public comment in October 1998.

Under the ARSP, frequencies in the range 420 MHz to 433 MHz are allocated to Radiolocation services on a Primary

basis. Systems employing this allocation are predominantly operated by the Department of Defence. The ARSP also allocates this spectrum to the Amateur service on a Secondary basis. Services having a Secondary status may not cause interference to, or claim protection from, existing or future services having a Primary status.

The Department of Defence has provided conditional permission to SOCOG to use these frequencies for a limited time in support of the Games. As the major body representing amateurs in Australia, the WIA has been supplied with a copy of this correspondence. Importantly, this permission makes clear that SOCOG's use of the spectrum is conditional on all ORN services being cleared from this frequency range after the Games.

All amateur operations within the range 421 MHz to 432 MHz will be affected. In order to protect the ORN from interference, it will be necessary to restrict the operation of Amateur stations in the ORN frequency range, for a certain geographical area around Sydney. It is expected that the ACA will achieve this by modifying the Amateur Licence Conditions Determination (LCD). The exact geographical and frequency range limitations imposed by the Amateur LCD will be determined after interference modelling has been completed.

The necessity for further restrictions outside the range 420 MHz to 433 MHz and beyond the Sydney basin is yet to be determined. Additional work is still required to explore the potential for mutual interference between the ORN and Amateur narrow band communications within the range 431.95 MHz to 433 MHz.

Consideration was given to allowing some amateur operations within the period 31 March 1999 to 31 December 2000. However, the SOCOG schedule, requiring the staging of over 40 test events in the lead up to the Games, provides no such window of opportunity.

Further meetings will be convened from late October 1998 to promote the establishment of the ORN. All stakeholders, including the wider Amateur community, will be kept advised of the work of this committee and general developments in regard to the project.

ACA Releases Draft New Australian Radiofrequency Spectrum Plan

The Australian Communications Authority (ACA) has released a draft new Australian Radiofrequency Spectrum Plan and invites public comment on it, in accordance with the requirements of section 33 of the *Radiocommunications Act 1992*. The draft Plan is intended to replace the January 1997 Plan.

The Plan divides the radio frequency spectrum into frequency bands, and informs radiocommunication users about the services allocated at the highest level to each frequency band. It is derived from spectrum arrangements developed internationally for the Asia-Pacific region of the world, and reflects Australia's treaty obligations as a member of the International Telecommunication Union (ITU).

The Plan is being updated primarily to incorporate changes made to international frequency allocations at the 1997 ITU World Radiocommunication Conference, and which come into effect on 1 January 1999. The changes will provide additional support in Australia for new and emerging developments such as high capacity orbiting satellite systems and lighter-than-air high altitude communications platforms delivering telecommunication services. They also include further world-wide allocations for the space science services and the ability to support full implementation of GMDSS (the evolving global maritime distress and safety system), along with a range of other enhancements.

Detailed information about the nature of the changes can be found on the ACA's Website <http://www.aca.gov.au/>.

Copies of the draft Plan can be obtained from the ACA by contacting Margaret Nestor, telephone 02 6256 5277 or e-mail mnestor@aca.gov.au. Closing date for comment is 12 November 1998.

BHP Science Awards

BHP and CSIRO have thrown their support behind the use of Amateur Radio in the classroom. On 6 October, the Principal of Gormandale and District PS, Rob Higgins VK3JKA was awarded the 1998 BHP Science Award for

Primary Science Teachers for his work in Science Education and in particular his work in the field of Space Education including satellite contacts and his school's chat with Andy Thomas earlier this year.

This award is one of three awarded annually to an Australian Teacher of Science. The recipient of the award receives a plaque to commemorate the event and a substantial cash grant.

Plans at this stage include the purchase of equipment to be used in furthering the school's work in satellite communication (a brand new Yaesu FT-847 is on the way) and a study trip by Rob to the US next year to visit various NASA sites and schools involved in the SAREX program or using amateur radio in the classroom.

The school would like to thank AMSAT and the Eastern Zone of the Wireless Institute of Australia for their support, and BHP and the CSIRO for recognising the potential our hobby has for future generations and giving their encouragement.

Gormandale and District PS is located in Rosedale Road, Gormandale, VIC and the postcode is 3873. If you would like

to contact Rob you may do so on 03 5197 7444, fax 03 5197 7442, or on e-mail Higgins.Rob.J@edumail.vic.gov.au.

ACA Concerned with Illegal Connection of Data Equipment

The ACA says it is concerned by reports that service providers and other users might be breaching telecommunications technical regulations by connecting non-standard data equipment to carrier leased lines.

The ACA's Executive Manager Telecommunications Standards, Grant Symons, has indicated that the concerns lie with a range of equipment generically known as digital subscriber line or xDSL equipment. He said, "While nothing has been confirmed yet, breaches could attract penalties under the *Telecommunications Act*.

"Recognising the potential for interference to other services present on a cable, the critical question becomes whether the integrity of a network is undermined by products in the Market."

The ACA plans to remedy the regulatory breach situation, where equipment of

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AN APOLOGY

We would like to extend our sincere apologies for any confusion that may have been caused when last month's column was published with incorrect dates for both the Healesville and Perth Hamfests. We hope you still made it to the events despite the mix-up.

CHECK OUT OUR WEBSITE

To find out more about exciting new product releases like the IC-PCR100, plus lots of other interesting Icom information, be sure to visit our website on www.icom.net.au

EVENTS NOT TO BE MISSED

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indeterminate compliance status is currently in service, but not causing any obvious integrity problems, by the issue of time-limited connection permits to users. In the meantime the ACA has called for a co-operative approach from the industry to find the best solution.

Ham Fined in the US for Radio Interference

The FCC has levied a \$2500 fine on a Florida ham for malicious interference on a business radio service frequency. Jeffrey G Guss KF4MWT of Palm Bay, Florida, was cited by the Commission following an investigation of several months that also involved malicious interference to an amateur repeater.

In February 1997, the FCC's Tampa office responded to complaints of unauthorised transmissions containing foul language and threats on 154.6 MHz. Agents tracked the transmissions to Guss's residence, but he denied having equipment that could transmit on 154.6 MHz. The agents later found gear in Guss's possession which would transmit on the frequency of the crime.

After denying the transmissions and failing to answer an Official Notice of Violation, a Notice of Apparent Liability was issued to Guss for unlicensed operation on 154.6 MHz, for failing to permit inspection of radio equipment in his van, and for failing to respond to the FCC's correspondence.

On 7 October, the FCC ordered Guss to pay the \$2500 fine within 30 days. However, there is no indication in the order that Guss's amateur ticket or the Land Mobile Radio Service licence he holds will be jeopardised.

[Via ARRL Newsletter]

Hams Help Nab Police Radio Jammer

A Connecticut Amateur Radio tracking team called Capitol Region Malicious Interference Tracking (CRMIT - pronounced "Kermit") helped lead authorities to a man they believe was interfering with local public safety communications.

A man has been charged with criminal mischief, interfering with police and breach of peace. He also could face similar charges in other communities as

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well as federal charges. The man, who is not a radio amateur, allegedly used a modified ham radio hand-held to transmit on police and fire frequencies used by as many as three dozen Connecticut public safety agencies. At one point, he is said to have jammed the Manchester, Connecticut, police system for 15 minutes.

The CRMIT team used transmitter fingerprinting equipment, and the offender helped to capture himself. "Its unique signature nailed it," CRMIT spokesman Bruce Marcus WAINXG said. The offender also had a habit of broadcasting Tchaikovsky's *Nutcracker Suite* and certain DTMF strings.

[Via ARRL Newsletter]

Gamma Rays Cause HF Blackout


Scientists in the USA have requested input from radio amateurs following a rare astronomical event. A gamma ray burst occurred at 1022 UTC on 27 August from a neutron star 15,000 light years away.

Experimental physics VLF monitoring circuits maintained by Stanford University recorded absorption down to tens of kilohertz and scientists believe there was an almost total blackout on medium wave and on frequencies up to 40 m, for several minutes or longer.

Paul Harden NA5N, of the National Radio Astronomy Observatory at Socorro, New Mexico, has requested data from any amateurs who were lucky enough to be on the air during this rare occurrence.

[Via RSGB]

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■ Equipment Review

Magellan GPS-2000XL Mk3 Receiver

Richard Mumane VK2SKY
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Royal Exchange Sydney NSW 1225
richardm@zeta.org.au

This review of the Magellan GPS-2000XL Mk3 follows on from my earlier look at the Magellan GPS Pioneer, in the July 1998 issue of *Amateur Radio*. The Pioneer, a low-cost (\$299) "entry level" Global Positioning System receiver, performed fairly well, though it had its limitations, which I noted in the original article.

Since then, I have had the opportunity to try out one of the mid-range Magellan models, the GPS-2000XL Mk3.

At a Glance

The GPS-2000XL is somewhat bigger than the Pioneer, and weighs in at 283 gm, somewhat lighter than my Yaesu FT-50 at 350 gm. The case has a heavy rubber backing so it won't slide around easily, although I did manage to launch it off the dashboard a couple of times, so the optional mounting bracket is worth considering! The case is nitrogen-filled and waterproof, according to Magellan. I took their word for this.

The unit runs off four AA batteries for up to 24 hours; considerably less if you use the display back-light. If you plan on doing much of your navigation after dark, you'll need to purchase the option external power/data pack.

The control layout is similar to the Pioneer, with four cursor keys for navigating around the screens, an ENTER key for selecting items, MENU key for accessing other options, GOTO for navigating towards a predefined location, back-light control and, of course, a power switch.

In addition, the GPS-2000XL has a CLear button to exit the menus without making a selection, and a NAVigation screen selector.

Performance

At \$469 the GPS-2000XL is substantially more expensive than the Pioneer, so the question that arises is: *what am I getting for those extra dollars?* The answer is two-fold: improved performance and extra features.

The GPS-200XL features what Magellan calls *AllView 12 Technology*. In plain English this means that the 2000XL has a 12-channel receiver, so it can acquire positioning data from up to 12 GPS satellites at the same time. By comparison, the Pioneer has only two channels.

Remember, that in order to determine your position in three dimensions, a GPS receiver needs to be able to "see" four satellites [see text box: *A Slight Crack in the Nutshell*]. The Pioneer's two channels would spend half their time on the first two visible satellites, then go to the next two, and then collate the data to compute your position. When more satellites are visible, the time to check them all increases. In contrast, each of the 2000XL's channels can devote itself full time to each satellite, so it can acquire the data and crunch the numbers much more quickly.

In practical terms this means the 2000-

XL is ready to go after power-up much sooner than the Pioneer. The specifications suggest three to five minutes from cold, but I found it would typically pick up half-a-dozen satellites in less than half a minute. The receiver also updates its position readout more frequently as well (about once a second).

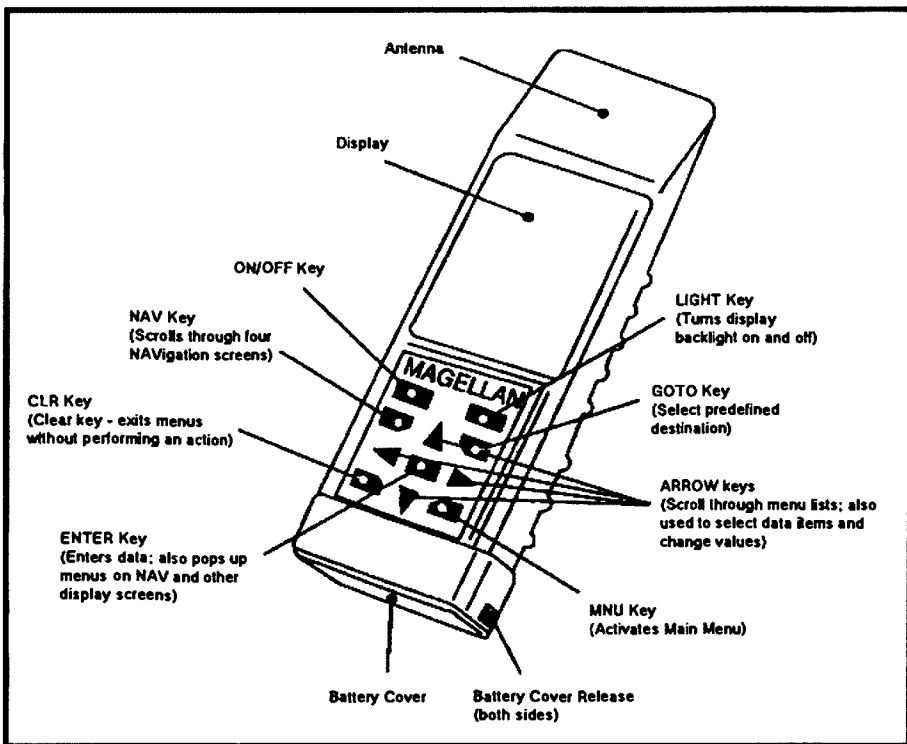
The 2000XL's receiver seems to be more sensitive than that of the Pioneer. For example, under forest cover, the Pioneer tended to lose tracking very easily; the 2000XL seemed to fare much better, though it still suffered when the trees got thick enough.

Magellan specifies a position accuracy of 15 metres RMS when Selective Availability is turned off (Selective Availability is a deliberate random error that the US military can activate in the system to reduce its usability by unfriendly forces.) The specified velocity accuracy is 0.1 knots. They claim that the unit is also usable at speeds of up to 1600 km/h and altitudes of up to 17,500 m, but I didn't have the opportunity to check either of these.

One test that I performed was marking a position, travelling some distance away, then returning to the original spot and checking how far away from that spot the receiver said I was. In fairly open locations, with a clear view of the sky, I



The Magellan GPS-2000XL Mk3 receiver is slightly larger than the Yaesu FT-50, but is lighter by 67 gm.



A drawing of the GPS-2000XL Mk 3, taken from the instruction manual, which shows the main features and controls.

found the GPS-2000XL accurate to within 10 or 20 metres.

In my review of the GPS Pioneer I quoted a worst case figure of up to 600 metres. In fairness, I should say that the 600 m figure arose when the reference position was on the windowsill of an apartment block, which had several other tall blocks in the area. Performing a similar test with the 2000XL, the accuracy degraded from 10-20 m to around 70 m; however, the test conditions were not as severe as for the Pioneer, so perhaps my comments in the earlier review were a bit harsh.

The lesson to be learned is that GPS performs poorly in built up areas where there is not a clear view of the satellites in the area. Even recent tests on a BMW mobile GPS system reported severe problems when navigating in the city.

Features

The basic function of the GPS-2000XL is essentially the same as the Pioneer, or any other GPS receiver: it works out where you are currently located, and tells you.

Various kinds of information can be derived from the basic position data. Most GPS receivers, including the

Pioneer and the 2000XL, allow you to program in *landmarks*, ie known reference points. You can memorise your current location as a landmark, or manually enter the co-ordinates of a known location, using a map or a reference book such the *Australian GPS Location Guide*.

You can then tell the receiver where you want to go, and it will tell you which direction you should travel and how far away it is. Using the position difference between successive readings, it can also tell you how fast you are travelling.

When you first switch on the GPS-2000XL, the EZstart™ software asks you to tell it roughly where you are located. Knowing what country and state is sufficient for the receiver to determine which satellites should be in the area, and after a few minutes it will determine your location.

You can customise the receiver in ways too numerous to list here. Briefly, you can select co-ordinate systems, time, speed, distance, elevation, map datum, plotting options and so on.

The GPS-2000XL display is a dot matrix type (the Pioneer, on the other hand, uses fixed icons.) This allows it much more flexibility in the kind of

information it displays. The 2000XL offers seven basic navigation screens, some of which can be customised to display information most suitable for your particular application:

- First and second position screens; display raw position data; latitude, longitude, altitude, date and time, and reference datum.

- NAV 1: When a landmark has been selected, this screen displays Bearing, Distance to that point, plus your Heading and Speed, and direction pointer to the target.

- NAV 2: An alternative to NAV1, displays Velocity Made Good (ie towards the landmark), Time to Go to next landmark, Estimated Time of Arrival at end of route, Cross track error. This last item tells how far left or right of the "line of sight" path you are.

- Pointer: For those who prefer a compass style display, this screen displays a pointer, Bearing and Distance to landmark, and Time to Go.

- Plotter: This screen displays a plot of the path you have travelled, plus Bearing, Distance, North indicator, and the straight line path. The display can be scaled from 100 km left to right across the screen, down to 20 m. In addition, you can measure the distance and bearing between any two landmarks displayed on the screen.

- Road: Shows the Bearing and Distance to the landmark, direction pointer, plus a pseudo 3D graphic of the "road ahead" The road graphic scrolls as you move.

Up to 200 landmarks can be defined, each with a short name. Up to 25 landmarks may also be programmed with a 20-character message which is displayed on the screen when you get close to the landmark. Five routes of up to 20 legs each can also be programmed. A "man overboard" feature lets you backtrack temporarily and pick up your trail where you left off. The unit can display other data, such as an odometer, sunrise/sunset times and phase of the Moon.

The GPS-2000XL manual thoroughly describes the operation of the unit, plus some useful reference material, eg an introduction to GPS, description of the National Marine Electronics Association (NMEA) data format, and a glossary of GPS terms.

A Slight Crack in the Nutshell

In my review of the Magellan GPS Pioneer, I mistakenly commented that "using as few as three satellites, one's position can be triangulated in three dimensions" [GPS in a Nutshell, *Amateur Radio*, July 1998, p 14] In fact, four satellites are required to accomplish this.

Thanks to Andrew Punch [c9608721@alinga.newcastle.edu.au] at Newcastle University, who pointed out my error, and provided the following explanation:

"The old Omega system did only require three stations to find a position, but you also had to have a rubidium driven and accurately set clock. So basically you have three known factors: the absolute distance to each of the stations. These three known factors are used to calculate the three unknown factors: x, y and z - representing a 3D point.

"Accurate clocks are not cheap! So in the GPS system another approach was thought up. Throw away the accurate clock source. But then we are left with two knowns: the difference in distance between each pair of satellites. We need three knowns to find the three unknowns. The answer: use four satellites instead of three. So with four visible satellites there are three known factors, thus the three unknowns can be found.

"It is simply the principle of high-school mathematics of 'simultaneous equations'. The result of this is if you have a certain number of unknown values you must have the same number of known values in order to solve it."

Other Goodies

A few other refinements are worth a mention here.

● Anyone who has ever triangulated positions on a map knows that errors can creep in when using reference points that have too little angular separation. So it is with GPS; errors can also arise when using satellites that are close to the horizon. The 2000XL has a Geometric Quality alert indicator that shows when

the current satellite positions may not be giving accurate readings on the ground.

● Under poor conditions, the receiver may not be able to see the minimum of four satellites required to calculate your position in three dimensions. If only three satellites are visible, the GPS-2000XL can still provide a usable position reading in two dimensions, ie latitude and longitude but no altitude.

● With the addition of the Magellan DBR™ or compatible differential beacon receiver, the GPS-2000XL can make use of Differential GPS signals, typically improving the position accuracy down to the order of centimetres. A differential radio beacon must be within range to use this feature. The beacon notes the difference between its known position, and its position as reported by its own GPS receiver. It then transmits positional error information to DBR equipment in the area, which can then cancel out an error introduced by Selective Availability or poor satellite geometry.

● The satellite status display is an improvement over the Pioneer's, in that it displays the satellite signal strength, and the estimated position error.

Room for Improvement

There was little I could complain about on the GPS-2000XL, but a few little matters could be put on a wish list:

● The use of the display back-light nearly doubles the battery consumption, from 80 mA to 145 mA, with the obvious reduction in battery life. The back-light could automatically turn itself off after, say, 30 seconds; I don't recall seeing a set-up option to allow the light to be programmed this way.

● There is no provision for an external antenna; however, the internal patch antenna works well for most situations.

● I found the usage of the cursor keys slightly inconsistent. In some cases, the right and left keys mean "go to next or previous item", while the up/down keys mean "pick next or previous value for the current item". In other cases, the key meanings are transposed. However, this is a minor quibble.

● Like the Pioneer, the display doesn't make it very obvious when satellite lock is lost. While both units have an icon to display the tracking status, I

Australian APRS Internet Mailing List Now Available

In the July issue of *Amateur Radio*, I mentioned that Darryl VK2TDS was looking to establish an Internet mailing list for those wishing to discuss the Automatic Position Reporting System. That list is now in operation. To subscribe, send an e-mail message to majordomo@marconi.mpce.mq.edu.au. In the body of the message, put the words *subscribe ozaprs*. For more information on Internet mailing lists, see my article in the October 1997 issue of *Amateur Radio*.

Also on the Internet, Jack Yeazel N4TEB and Joe Mehaffey W2JO have set up a very useful page of GPS reference information at <http://joe.mehaffey.com>.

still think that the position display should blink, and an audible alert like the beeper on a cheap digital watch, would be a useful feature.

APRS

The GPS-2000XL is able to pass positioning data to other equipment using the standard NMEA 0183 protocol (version 1.5 or 2.1). Amateurs wishing to experiment with the Automatic Position Reporting System (APRS) will need to purchase the optional 12V power/data module, or the PC upload/download kit.

Conclusions and Purchasing Information

Overall, I found the Magellan GPS-2000XL to be a competent performer and easy to use. Thanks to Chris Ayres at Dick Smith Electronics for the loan of the unit.

Magellan GPS-2000XL MK3 Satellite Navigator, D-3928, \$469.

External power module + NMEA data interface D-3902, \$99.95.

PC Upload/Download module will be available soon, D-3916, \$299.

Australian GPS Location Guide, B-2390, \$14.50.

Carry case, D-3903, \$34.95.

Mobile mounting bracket, D-3901, \$55.00.

■ In the Workshop

A J-Pole Antenna for Two Metres

Drew Diamond VK3XU
45 Gatters Road
Wonga Park VIC 3115

If you want a simple, low visual impact, omnidirectional, effective vertical antenna for VHF work, then the j-pole is probably one of the easiest antennas to make and get going.

The radiating part is a half-wave length rod, to which is attached an electrical quarter-wave matching stub, shorted at the base.

Our coax feed-line is connected at the 50 ohm (or 75 ohm if you wish) point about 50 mm from the base of the stub. Shown on the drawing are formulas for scaling the antenna for bands other than 2 m (144 - 148 MHz).

Construction

For mechanical strength, reasonably large diameter tube should be used for the radiator and stub. Also, tube or rod which is too thin will whip about in the wind,

and cause significant SWR variations during use.

My local aluminium merchant stocks tube which is nominally 16 mm diameter (actually 5/8" - apologies again for having to mix metric and Imperial), which is a nice size to work with, and "looks right".

The base is made from a 50 mm length of aluminium extrusion measuring approximately 82 x 28 mm, which was found in the merchant's off-cut bin. Total cost for 2.5 m of tube and base was \$16.

Fabricate the base as shown. If you have access to a drill-press, drill the holes to tube diameter. To preserve alignment accuracy, the base should be fixed squarely upon the drill table as shown in Photo 1. Or, with an ordinary electric drill, accurately mark out the hole positions on both side of the base, then drill these under-size separately. Enlarge

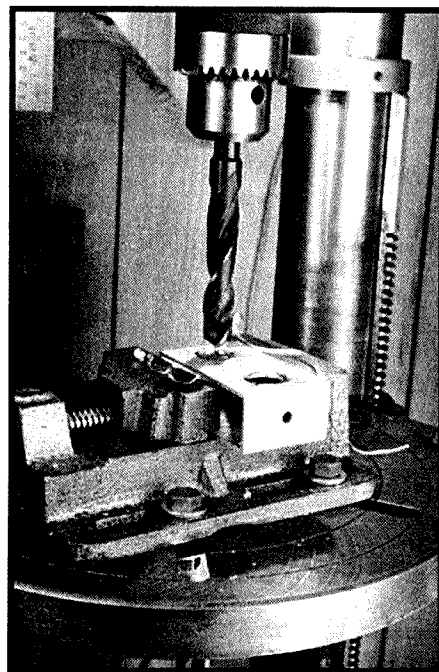


Photo 1 - Drilling the base.

to tube diameter with a rat-tail file and/or a tapered hand reamer. Similarly, drill the two lock-screw holes.

A 90 mm x 40 mm rectangle of aluminium sheet is used to make the coax bracket. Note the 10 mm extension to accommodate the stainless steel hose clip.

Photo 2 shows a method of curling, or wrapping, the aluminium around an off-cut of metal rod of the tube's diameter. Starting at the end of the bracket, the sheet is progressively gripped in the vice then curled around the rod, a little at a time.

Photo 3 shows the components of the base and coax bracket before assembly. A length of RG-58 coax outer braid is soldered to the inner of the coax connector. A second stainless hose clip attaches this braid to the radiator section of the stub rod. You should find a range of hose clips at your local auto parts supplier.

Final assembly of the base and feed point is shown in Photo 4. Note how the lock screws have been fitted to the base with a nut each side, the screw being made to bear firmly upon the tube in the first instance.

Lock by pinching up the external nut. Use zinc-plated or stainless steel screws and nuts. Do not use ordinary steel, brass or nickel-plated hardware if you want to avoid serious corrosion.

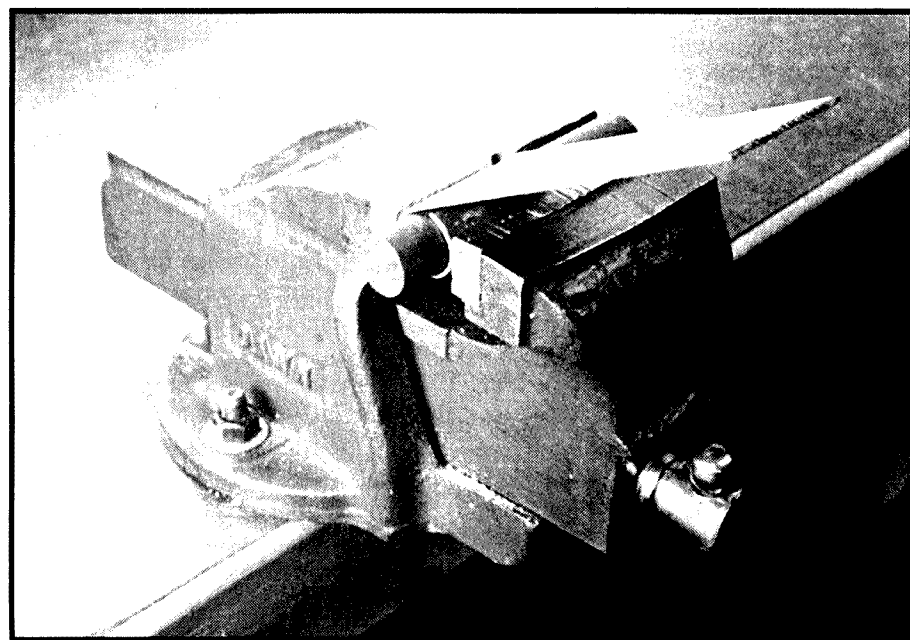
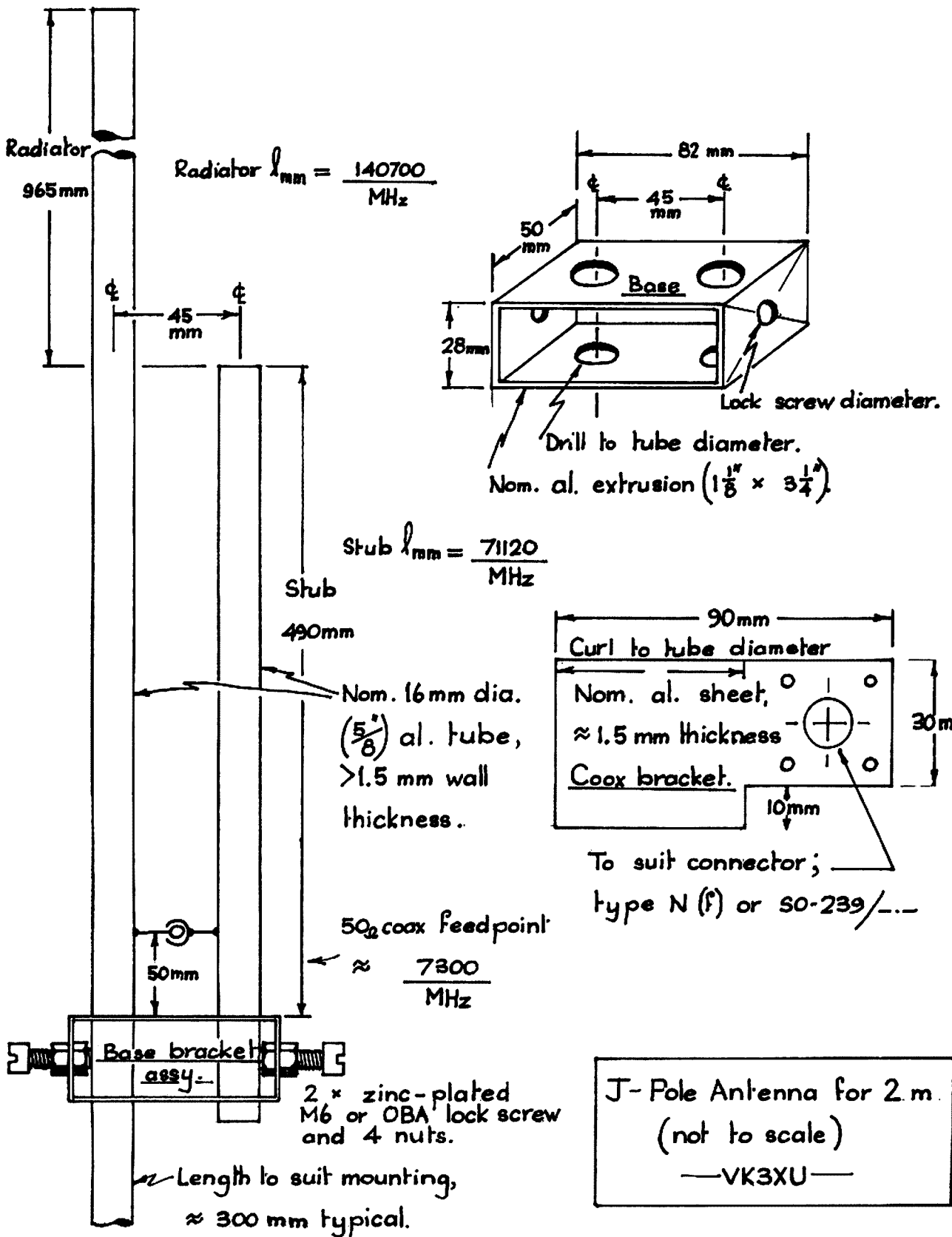


Photo 2 - Forming the coax bracket.



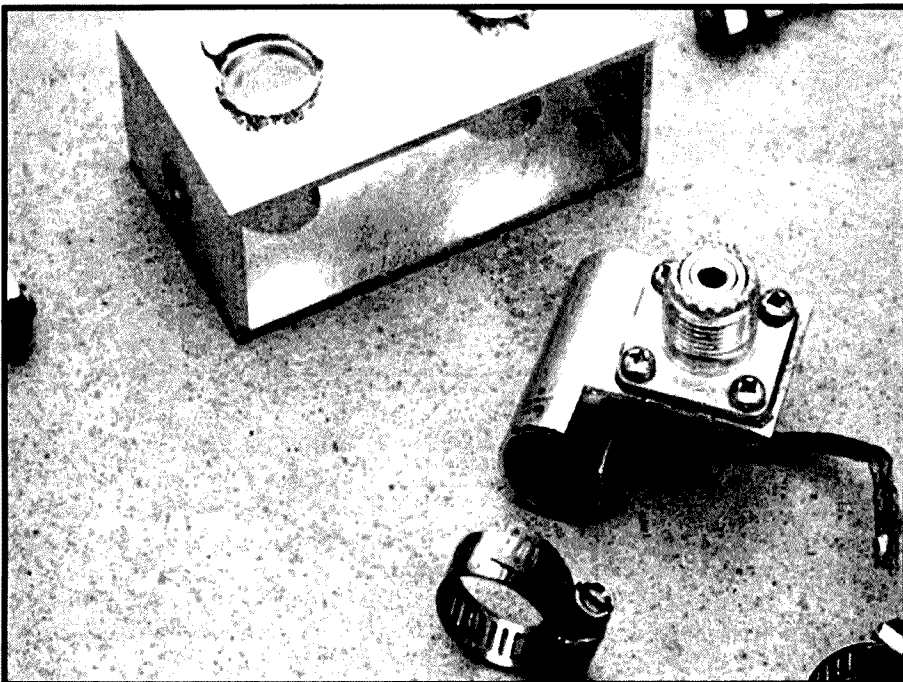


Photo 3 - The antenna base components.

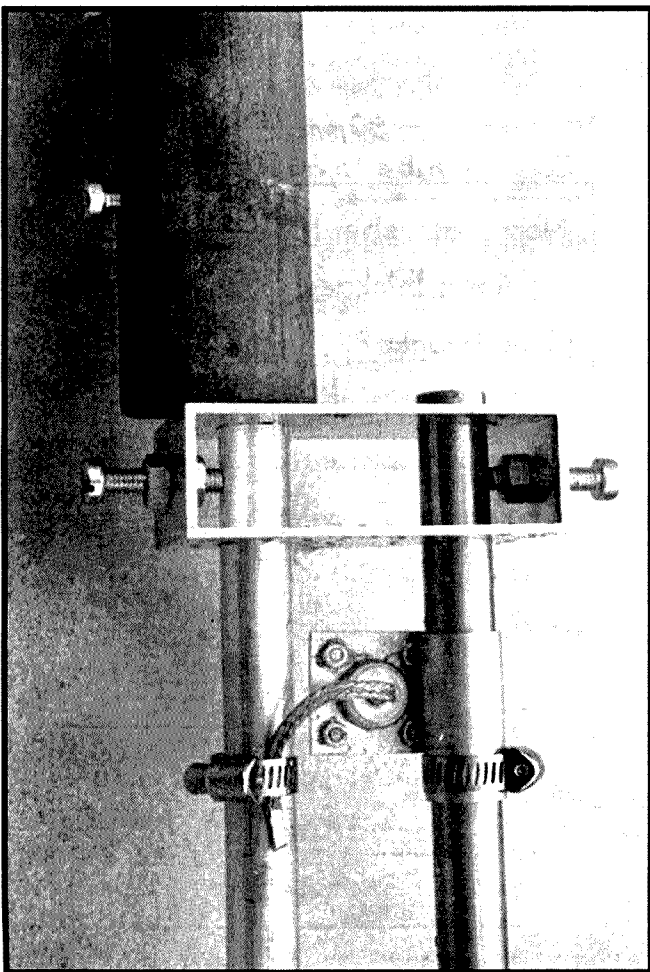


Photo 4 - The final assembly.

Attach a short length of low-loss coax cable to the feed point. Insert an SWR meter in the line between radio and antenna. On a clear channel about mid-band (and not a repeater), key the transmitter on. You should obtain a reasonably low SWR at the initial 50 mm location shown. If it is much higher than about 1.1, experiment with the feed position, and perhaps also the stub and radiator lengths, to obtain lowest SWR reading. Typically, if you achieve an SWR of 1.1 at 146 MHz, it may rise to about 1.5 at the band edges.

When satisfied that all is well, the antenna should be placed in the chosen final clear elevated position, be it chimney-mount, vent-pipe, fascia mount, or atop your mast. Fix with suitable hardware such as j-bolts, u-bolts or threaded set-screws as necessary.

Finally, remember to wrap black insulating tape around the coax plug and any exposed thread of the coax socket.

Reference

Radio Communication Handbook, 6th Edition; RSGB. ar

An additional useful precaution is to include plenty of petroleum jelly in all metal to metal joints, thus filling voids and excluding moisture.

The length of spare tube projecting below the base is irrelevant. So, in the first instance, make the radiator and stub at least 20 mm longer than that shown, in order to allow for errors and vagaries, and permit fine tuning upon test.

Adjustment

Position the antenna in a clear position, well away from any objects. A 2 m length of ordinary galvanised water pipe driven into the soil near your shack will do initially, into which is fitted the bottom extension of the j-pole.



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Technical

Technical Abstracts

Gil Sones VK3AUI
30 Moore Street
Box Hill South VIC 3128

Racal RA17W Receiver SSB Modification

DA Bunday G3JQQ described a modification to a RACAL RA17W receiver which is claimed to give improved performance when receiving weak SSB signals. The receiver is able to receive SSB in the normal unmodified form but the modification helped with weak signals.

The modification appeared in the *Technical Topics* column of Pat Hawker G3VA in the September 1998 issue of *RadCom*.

The modification converts the noise limiter double diode V21 into a product detector. The circuit is shown in Fig 1. The front panel limiter switch is used as the SSB/AM changeover switch. The BFO feed is taken to the strapped cathodes.

Coaxial Cable Antenna Joint Weatherproofing

In the *Technical Topics* column of Pat Hawker G3VA in *RadCom* for September 1998, a way of sealing the coax

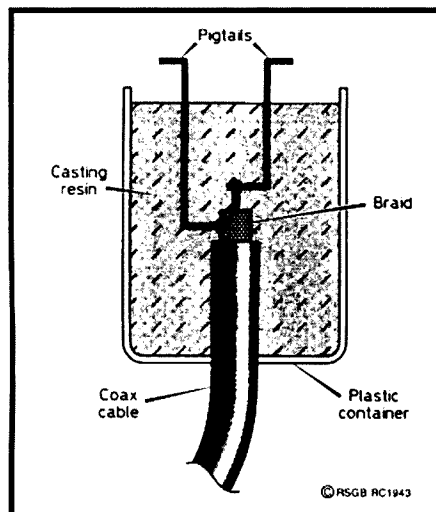


Fig 2 - Potted coaxial cable antenna joint.

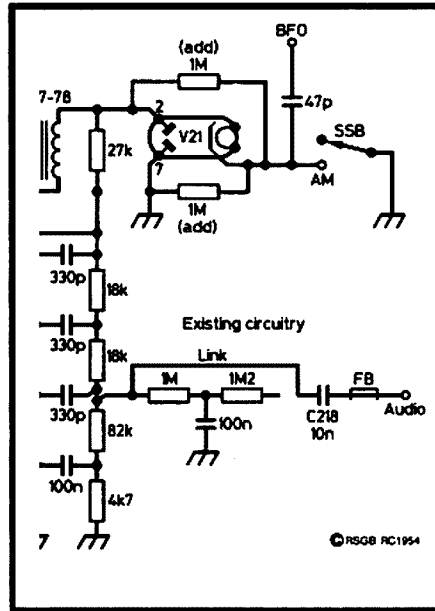


Fig 1 - Conversion of RA17W noise limiter into SSB product detector.

end where it is connected to the antenna was described. The idea came from Roger Gould-King ZS6QL and originally appeared in *Radio ZS* for February 1998.

The coaxial end and the antenna connection wires are potted in epoxy casting resin. The resin and the joint are

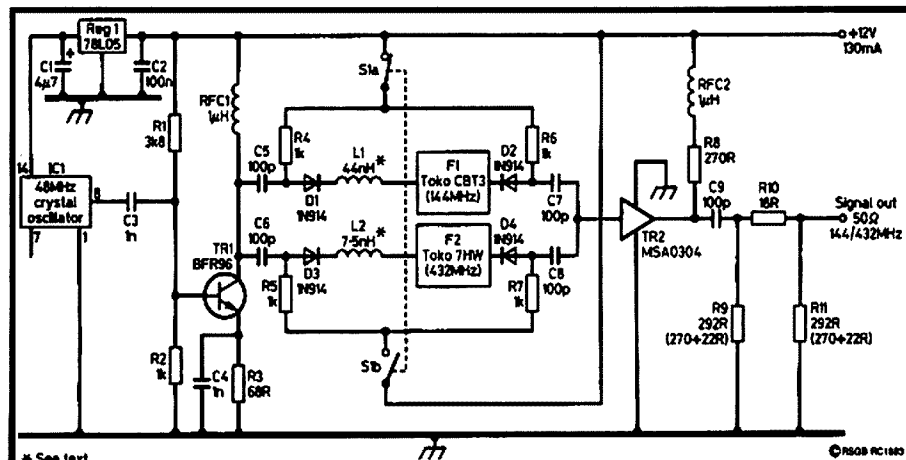


Fig 3 - Signal source.

contained in a plastic container. The assembly can be transparent if you wish so that you can check it visually, or it can be opaque if you use resin containing a pigment.

The assembly is shown in Fig 2.

Solder Dispenser

A simple solder dispenser was shown in the *Homebrew Hints* column of Ian Poole G3YWX in *RadCom* for September 1998.

This placed a coil of solder inside a film container with the end of the solder roll brought out through a hole in the film container lid. This is a handy way to carry a small quantity of solder clean and ready to use. It saves the solder from becoming tangled up and grimy in your box.

Combined 2 metre and 70 centimetre Signal Source

A useful signal source using a low cost computer crystal oscillator was described in *RadCom* August 1998 by John Brown G3D.V.V. The design uses the harmonic rich computer crystal oscillator module to provide signals on both 144 MHz and 432 MHz. The output signals are passed through band filters to select the required harmonic.

The circuit is given in Fig 3. The crystal oscillator module is a 48 MHz one intended for computer clock use which can be obtained from a variety of sources both new and surplus. The filters are the TOKO units often used in transceivers which come tuned to frequency. The filters are available but you may have to look around for them.

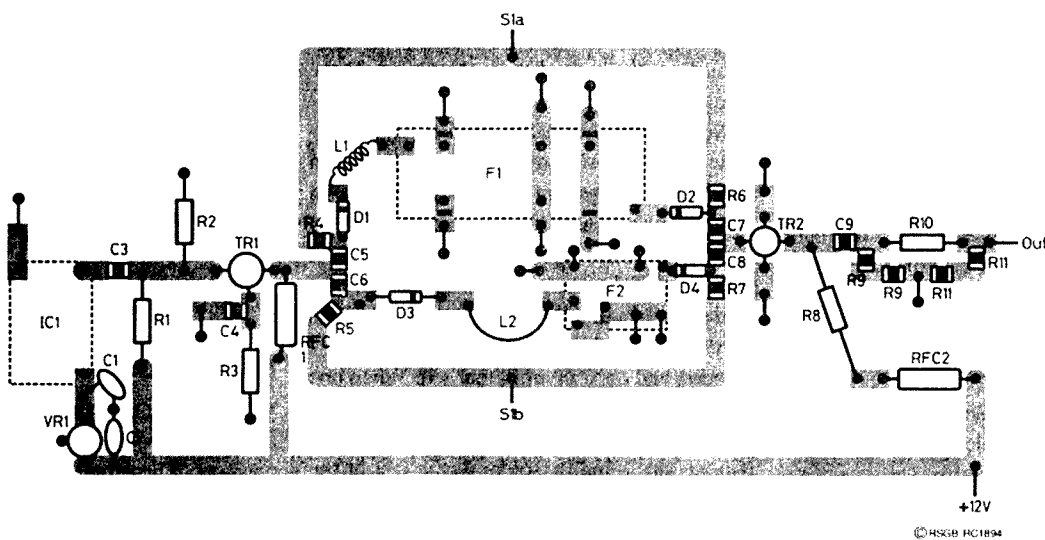
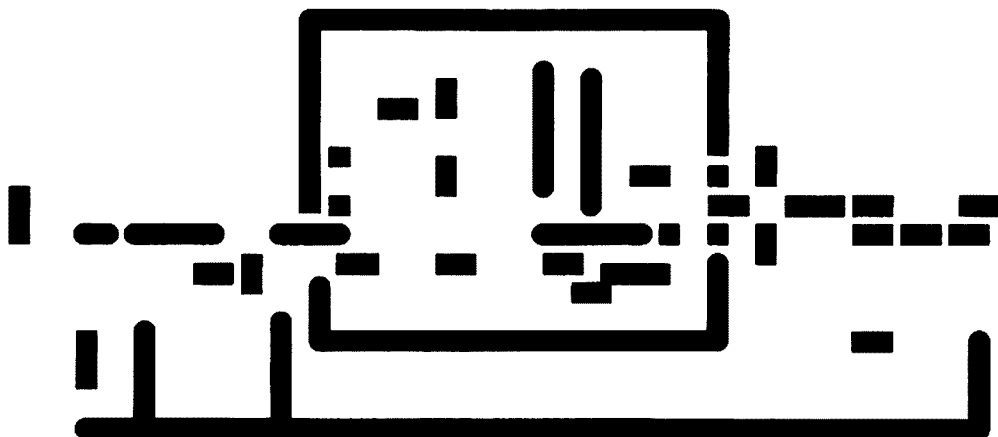


Fig 4 - PCB layout and parts placement. Scale to the 141 mm dimension given.

The article gave UK sources for the filters and, if you were stuck, you could try ringing the UK suppliers and then arrange to pay using your plastic credit card. The shipping cost of airmail postage would not be too much for such items.

The UK suppliers are:

For the 144 MHz TOKO CBT3, part No Cirkit 17-10083, the UK phone number of Cirkit is 01992 444111; and

For the 432 MHz TOKO 7HW, part No BONEX 080235, the UK phone number of BONEX is 01753 549502.

The phone numbers given are the UK phone numbers and you will need to convert these into the number you actually dial by adding the international code to the UK national numbers given. This is similar to converting your number if you dial back home from overseas.

For payment, your plastic card will work just the same as for an Australian supplier with the card company doing the currency conversion.

The original gave 10 mW on 144 MHz and 1 mW on 432 MHz. Harmonics were

16 dB down on 288 MHz for the 144 MHz output.

The inductors L1 and L2 are used to match the filter inputs and are not particularly critical. L1 is 3 turns of 0.56 mm enamelled wire 6.5 cm long wound on ID 4.75 mm and pulled out until there is 1 cm between the ends. L2 is a loop of 0.56 mm enamelled wire 1.5 cm long with the ends 1 cm apart.

The circuit board is 1.6 mm thick and double sided. The track widths are to provide matching and should be for a 50 ohm micro-strip line. About 2 mm should be OK. The board layout is given in Fig 4, together with the parts placement.

There are parts on both sides of the boards. The more critical parts should be SMD types, although ordinary ones could be pressed into service.

Scratch Prevention

Also in the same *Homebrew Hints* column of Ian Poole G3YWX there was a tip on how to keep plastic jiffy boxes and other items scratch free during construction.

The technique is to apply masking tape to the surface while drilling and filing during construction. The masking tape also provides a good surface to draw on whilst marking out the project. The tape can be easily removed after work has been carried out leaving the surface free from scratches. **ar**

Antennas

Random Radiators

Ron Cook VK3AFW and Ron Fisher VK3OM
C/o PO Box 2175, Caulfield Junction VIC 3161

Feedback

In August *Random Radiators* a challenge was issued to readers to send in contributions. Following that there was a discussion on low dipoles, complete with some computer simulations of radiation patterns. Astute readers will have seen a response in the form of technical correspondence (September *Amateur Radio* p46) from William VK3MI.

Not So Perfect Ground

William noticed that my plots were for perfect ground conditions, a convention often used because of the wide variation in real ground conditions. For the ground losses assumed by William he found that there was an additional 8 dB loss for the 1.8 m high dipole compared to the 13 m one. He also made the very interesting observation that raising the dipole to a modest 4 m gives a 4 dB improvement.

Another good point made by William was the usefulness of high angle radiation for ranges of 30 to 600 km and its presence on 80 m for all but two hours each day just before dawn.

Another person to respond was Ric VK7RO. He thought my article was misleading, and says, "I suspect that your NEC-Win Basic program is based on MININEC which has very noticeable errors at heights of less than 0.2 wavelengths. Using ELNEC, a MININEC based program, I once managed an alleged gain of 30 dB from a VERY low aerial."

"I enclose two plots of your 80 m dipole made using EZNEC, a NEC-2 based program using a Sommerfield-Norton high accuracy ground model. This program is good at even low heights. They show the gain of the dipole at 1.8 m is 10 dB less than at 13 m.

"May I recommend that you read 'MININEC': The Outer Edge of the Sword' by Roy Lewallen W7EL, in QST

for February 1991, and check his Website for more good information.

"I have learnt more about aerials by playing with these analysis programs than by years of reading books. The ability to compare gain figures and not only patterns is extremely useful. The best example is probably the one from K6STI showing that a triangular loop fed in the centre of the bottom side has less gain at low angles than an inverted vee at the same height. But the pattern of the loop looks wonderful for low angle radiation! "Keep up the good work."

Response

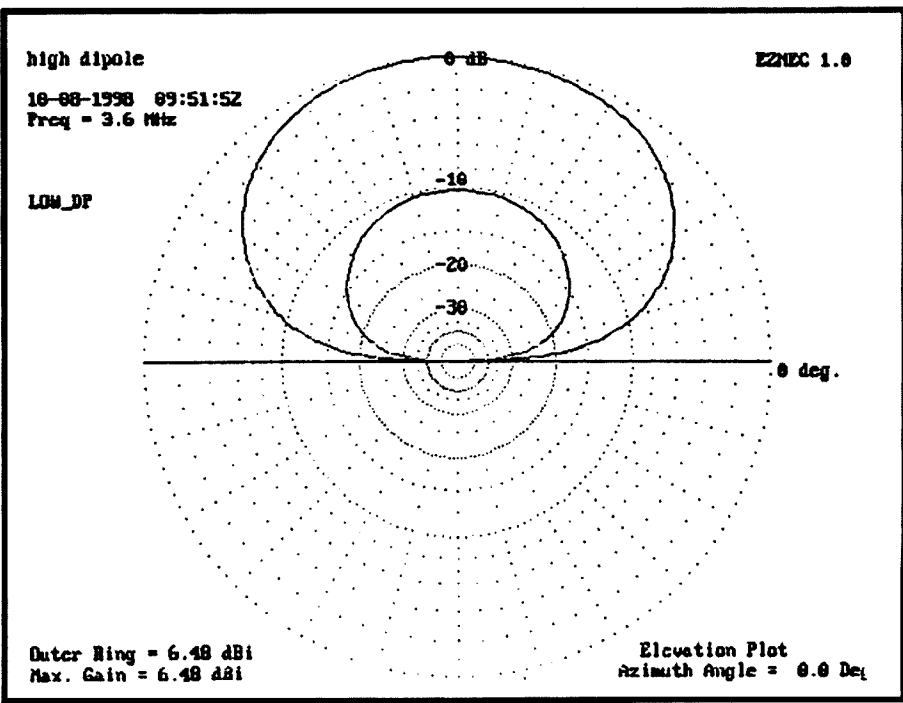
Well, at this point I should make some comments. I did make the point in the concluding part that "placing the antenna at 1.8 m will result in much of the signal being absorbed by ground losses.....". Ric has quantified the extent of these losses

at 10 dB. William got a slightly better estimate of 8 dB, but perhaps his computer program doesn't use as comprehensive a ground model as Ric's. The actual losses will depend on the environment, only part of which is the ground.

So, the bottom line is, yes, a dipole at 1.8 m will work; raising it to 4 m will allow it to work better, and raising it to 40 m will allow it to work even better still.

Ric's comments about the triangular loop are interesting. I presume it was a full wave loop with the apex up. The shape of an antenna's pattern is often the basis of gain calculations. The theory is that if there is a good match, all the incident power goes into the antenna, where a little is lost in ohmic losses and the majority is then radiated in proportion to the pattern.

I became aware of some apparent exceptions to the rule some 30 odd years ago when some VHF beams with sharp patterns showed measured gains many dB less than expected. The problem was, I believe, that the assumption of low losses in the antennas was wrong and that the antennas had efficiencies of less than 50%, so producing gains worse than 3 dB below the pattern calculation.



Plots of the 1.8 m high and the 13 m high 80 m dipoles on the same scale made using EZNEC, a NEC-2 based program using a Sommerfield-Norton high accuracy ground model.

I'm not sure what the problem with the loop is. If an antenna has a good pattern and low copper losses, but couples into a lossy ground, then it may have less gain than another antenna which has a broader pattern.

Does the loop couple more closely into a lossy ground than an inverted vee? Does the loop become superior at a greater height? Is there a weakness in the computer program?

I don't know; however, most antenna gurus contend that loops are less affected by the environment than other antenna types.

So, there is a mystery to be explained by someone. Any takers?

Plots

Ric has enclosed three plots from his program. I'm submitting the third one which shows both the 1.8 m high and the 13 m high dipoles on the same scale. Unfortunately, he has used a dot matrix printer whose ribbon is not brand new, so it will not reproduce as well as it should.

If you send in a diagram that is worth publishing, please make sure that it is of high contrast and will still be readable when reduced in size to a half page width.

Ground Plane Radials

In a postscript, Ric mentions George Brown's autobiography, *Part of Which I Was*.

When he was working for RCA, George invented the Ground Plane, but he only used two radials. The sales department thought nobody would believe that it was omnidirectional, so they added two more radials!

Anyone want to cut off half their ground plane radials?

Windom

Ric also mentions that in Windom's original article (*QST*, 1929?) he used a VERTICAL dipole with a single wire feed.

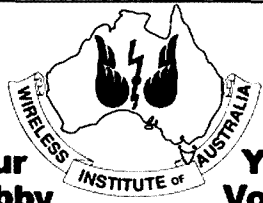
A horizontal wire has a constant characteristic impedance, so it can be used as a feeder and will not radiate much if correctly matched. A sloping wire or a

WIA Call Book '99
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vertical wire has an average characteristic impedance, but it is no longer constant as the capacitance per metre gets less as the wire gets further away from ground.

Thanks

Thanks very much Ric for taking the trouble to write and to send in the print outs. Thanks also to William for the copy of his letter. Without these useful and thought provoking contributions there can be no *Random Radiators*. ar



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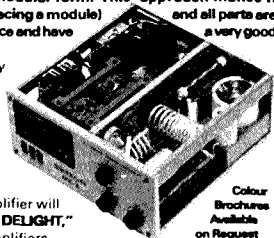


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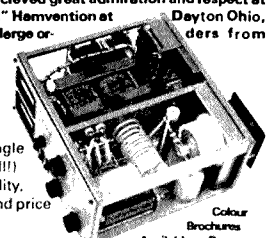


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■ Women in Radio

A Letter to Your XYL

Christine Taylor VK5CTY
16 Fairmont Avenue
Black Forest SA 5035

This article was first printed in the January 1991 issue of *QST*, the monthly magazine published by the American Radio Relay League (ARRL). I found it in the *YLRL Harmonics* magazine, the quarterly magazine similar to the *ALARA Newsletter*. It is reprinted here with permission from the ARRL.

I think it will touch a chord with many YLs and the XYLs of current amateurs. Only the actual conditions for amateur licences in Australia and in the US differ. The feelings and attitudes of those involved in the world of amateur radio are the same.

Dear OM,

The following is an open letter to your XYL. It's my experience - still fresh as I write - of becoming a ham after years of disinterest. I'm still not over the surprise! If it encourages just one XYL like me to take a Novice class, it will have served its purpose.

Dear XYL (Ex-Young-Lady),

That's what they call us, you know, these ham-husbands of ours. But before you take offence, be aware that he's your OM - Old Man. Feel free to call him that. Anyway, if anyone had told me a few months ago that I would be (A) a ham, and (B) enjoy being a ham, I'd have suggested a long walk off a short pier.

For seven years, my OM, Bill N4BTE, had suggested wistfully that "I ought to try it" or that he'd "like it if I were a ham, too". Because he has one of those minds that can joyfully muck around in picofarads and milliamps and 3-element beams, and I need ON-OFF printed on the kitchen light switch to feel comfortable around electricity, I knew that even if I tried, I could never be a ham. I already couldn't understand half the words in the conversations I overheard on his hand-held transceiver (the little radio with the stubby antenna he carries everywhere; you know the one). And I didn't want to

understand. I had no interest in ham radio. Zip. Zero. Nada.

Nothing changed, but one day I finally ran out of excuses. "The kids are too young" (the boys are 22, 19, 17 and 13 now, and two of them are hams). "The cost is too high" (the Southern Maryland Amateur Radio Club course was free). "I'll never understand it!" (So what? The basics can be picked up on faith and memorisation, and I can take and retake the test until I pass).

I was out of excuses, and I still had no interest whatsoever in ham radio. But I have a strong interest in my OM even in our 25 years of marriage. As a former

When the licence came, informing me that I was KA3VNK, it was just a nice token of a way to please my husband.

officer in the US Marine Corps, wistfulness doesn't come often from him. Yet, it was there even after seven years of hitting a blank wall with me (that wistfulness is in your OM's voice. I hear it almost every day, "Oh gosh, I wish my XYL would....." "I hope your OM knows how lucky he is...." "I've tried for 15 years....").

So I decided I'd let him take me to the first session of a 10-week Novice course. There my worst fears were realised. I'd have to master Morse code and pass a code test. Then I'd have to take a written test. Most of the students were men who already spoke an electronic language I couldn't grasp (and still can't, by and large) even though they weren't hams yet. But one look at my OM's barely masked joy at having his XYL there prompted me to do my best. I gritted my teeth and plodded into it.

[In Australia we do not start off with Morse code, we can get our first licence with just the theory and the regulations.. VK5CTY.]

In spite of our cheerful and knowledgeable instructors (Lee KF3T, Vic WA3YVV and Mike XO7V), I didn't enjoy those Monday nights except for the new friends we began to make. I was tense, frustrated and asked dumb questions ("Well what is a radio wave? I still don't see what you mean...")

I struggled with Morse Code (I kept hearing "A" for "N" and I lost the whole last part of the alphabet somewhere). But one glance at Bill's happy face kept me going. Fortunately he was almost always able to clarify, at least partly, whatever eluded me in class.

I practised code at home for about 30 minutes every day. I recorded the code sessions at class and used the ARRL training tapes. After all, I wanted to give Mr Morse a fair chance at my middle-aged brain. I read chapter after chapter in the manual and I understood about every 20th word, usually 'and', 'the' or 'what'.

Suddenly, one night after the code practice session, I was informed that I had passed my five words per minute requirement in Morse Code (a combination of 25 letters and numbers in 60 seconds works out to about five words per minute). That part of my Novice test was behind me. I was stunned. Only then did I understand what the instructors meant about the code requirement. The worst was over. I had passed the Code test. I was floored!

[In the US there are two ways to pass the code. Option 1 is to copy a simulated code QSO or contact between two stations and answer questions about the text, eg the names and call signs of the operators or the antennas used, etc. Option 2 is to copy 25 consecutive letters or numbers (one minute) absolutely correctly, within the five minutes of the Code test. In Australia you may have no more than 10 errors in the 125 (5 times 25) characters of the five minute test. It would seem that in the US the Code test may be taken within the classroom situation; in Australia it must be done at a separate examination. VK5CTY]

A few weeks later I had memorised enough of the information to answer 22

of 30 multiple choice radio rules and electronics questions correctly.

[In Australia this would be 35 of 50 theory and 21 of 30 Regulation multiple choice questions .. VK5CTY.]

Suddenly it was all over. I was a Novice Amateur Radio Operator. It was unbelievable - I was in shock. My husband was as proud as a fan-tailed peacock.

During the six week wait for my 'ticket' (an FCC licence with my callsign on it) I still had no over-riding interest in using it. As a Novice I would not be permitted to talk to my OM via the 2-metre FM repeater (a station that receives radio waves and sends them back so that hams everywhere in the area can talk as they inch to and from work). To use these repeaters I would have to have a Technician's class (the next step up) licence. No way!! I'd survived my Novice class and that was enough.

[In Australia, with a Novice Limited licence - which a pass as explained above would give you - you CAN use these repeaters .. VK5CTY].

Alas, we had no other radio I could use, and the budget was strapped, to say the least. On the way back from a hamfest, when my husband asked how I felt about being a ham, I told him that my whole ham experience so far seemed to be "all pain and no gain".

When the licence came, informing me that I was KA3VNK, it was a nice token of a way to please my husband. But a couple of weeks later, Bill saw an ad for a used 10-metre transceiver (the radio is not that big: 10-metres refers to the length of the radio frequency waves it sends and receives). It was only a bit over \$100 so he sold an old receiver and we bought it.

For \$20 and a ball of string he and our son flung a dipole antenna (measured length of wire) up 20 feet and stretched between two trees beside the garage.

Then they ran a length of co-axial cable (heavy round wire) from the centre of the antenna wire (attaching the co-axial cable to the centre divided it into two half-sections, thus it became a dipole - get it?) in through the family-room window and attached it to the radio. He hooked up the Morse key and a microphone.

Now, according to our class instructor, I could "work the world". This is

called DXing (talking over great distances to other hams in foreign countries.

Because we had had no HF (high frequency 1.6 to 30 MHz) radio in years, Bill had not done much DXing. Besides, he is service-oriented (he's applied to be our county's Amateur Radio Emergency Co-ordinator), he enjoys his 2-metre (tinier antenna) rig in the car and had not missed the opportunity to get into 10-metre DXing. (There! You understood exactly what I meant by that now - see how fast it can come?)

One dreary Saturday afternoon we turned on our newly acquired 10-metre transceiver and began tuning up and down through the band where Novices are allowed to use 'phone' (talking by microphone rather than sending Morse code). Bill disappeared after a bit and I was alone.

It was all garble and Greek to me, and besides, who would ever hear the tiny 25 watts (like a light bulb) of power I put out over the 200+ watts I could hear the

I still don't muck around in picofarads and I still don't understand exactly how a 3-element beam works, but at least I know what one is!

big booming males reporting as output power. Not only that, but it was a contest weekend and most of the hams were spitting out contacts (QSOs) at the rate of one every five seconds. But I sat and listened.

I heard what they wanted a ham they had contact with to say, and because the first attempts this way wouldn't involve a lot of technical ham talk I wasn't quite ready for, I rehearsed my responses in my head, waited for a QRZ? (who is calling me?), took a deep breath and quavered into my mike "KA3VNK".

To my utter amazement and horror, I heard a voice say, KA3VNK this is WB5BIR. You are 5 by 9 into Houston, Texas. My name is Al and my 10-10 number is" I sat stunned in my Maryland family room. A piece of wire in the trees and I was talking to someone in Texas!

I was honest - he was my very first contact, and I had no 10-10 number,



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whatever that was (helpful hams later told me and now I have one too), but I said he was '5 by 9' (I guessed) in Maryland and my name was Bobbi. He thanked me, wished me 73 and was gone. (73 means Best Regards, 88 means Hug and Kisses - send that to your OM or close friends. Or grandchildren. The Latin Americans tend to send 88s to all XYs. I ignore that, but off-air I giggle).

My log book shows that I waited two minutes to understand what had happened then I found another frequency and plunged in.

Seventeen days later I "hit" Puerto Rico, the next day, Canada and Alaska... and one month later I'd made friends in Europe, Africa, Central America and South America. One night I had a gentleman repeat his callsign and I discovered that my tiny rig had taken me to Japan. I was hooked! Overjoyed! Thrilled and delighted to be a ham!

After surviving an onslaught of real life 88s for getting me into ham radio, my OM was flabbergasted when I worked 69 non-US stations in 44 different countries in the next 30 days - between



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I talked to lots of US hams, too - and heard the wistfulness in your OM's voice. So that's why I'm writing to you.

All this DX took place in the last month as I'm writing this down. Yes I caved in and took the radio club's upgrade course to become a Technician (no more Morse code, just more memorisation - and a wee bit more understanding: it'll come, give me a decade). I passed that, too! So now I can chat with my OM all the way to his office 30 miles away.

I went into ham radio with only an intent to please my husband by getting involved in a part of his life that's important to him. I had no interest and the course was frustrating. But weeks after it was over and I had passed, I found a sudden joy in an area of ham radio that my OM hasn't yet tried. And I renewed my childhood interest in collecting stamps and postcards as QSL cards

(special postcards hams use to verify QSOs) began arriving from all over the US and abroad. Mail time is exciting every day, now!

I still don't muck around in picofarads and I still don't understand exactly how a 3-element beam works, but at least I know what one is!

If your husband has given you this letter to read you can be sure that he's one of the wistful voices I've been hearing.

Whether you find your own special niche in ham radio - and I hope the blessing comes to you as it has for me - I can tell you that the joy and pride in your OM's eyes and voice will be worth every moment of those weeks of class.

And the feeling you'll have when you hear another OM's voice when he says to your husband, "Boy, are you lucky, I wish my XYL ..." is incomparable.

Sincerely,

Roberta Stoddard Rogers N3IAR

ar

QSL Information for VK5MIR Contacts

Arrangements are in hand for the provision of a special QSL card in connection with VOICE contacts made with Andy Thomas VK5MIR during his operations from the MIR Space Station.

A commemorative card is being produced. However, some minor problems are currently being experienced with preparation of the card. It is hoped that this QSL card will be available by the time you read this in the November issue of *Amateur Radio* magazine. The card will commemorate the first use of an Australian radio callsign from 'space' and should become quite a collectors' item.

Discussion with Andy Thomas indicates that the VK5MIR special event callsign was used only when the Space Station was over Australia/New Zealand and possibly some neighbouring countries.

Due to the nature of his operations from MIR, Andy did not keep a log containing full details of contacts such as frequency, time, signal strengths, etc. The commemorative card will therefore not carry this type of information.

Those people who wish to obtain a card are asked to make their claim for a contact

by way of their normal QSL card addressed to Ian J Hunt VK5QX, 8 Dexter Drive, Salisbury East, South Australia 5109.

The South Australian Division of the Wireless Institute of Australia is supporting this effort by provision of the costs for production of the QSL card. It is proposed that the card will depict both the MIR Space Station and also carry a photograph of Andy in his Russian space suit.

The claim must be accompanied by either a self-addressed-stamped-envelope or suitable funds to provide for return postage. It is intended that the VK5MIR card will be of standard postcard size, thus an amount or stamps to the value of 45 cents should suffice for postage within Australia.

For QSLs to places outside Australia a "green stamp" contribution is requested.

It is also requested that only ONE claim per station be made.

Please note that the special VK5MIR card is only for contacts made using voice communication with VK5MIR.

Applications for QSL cards for Packet Radio contacts with R0MIR/R0MIR-1 should be sent to the MIREX President, Dave Larsen N6CO, PO Box 311, Pine Grove, California USA 95665.

Ian J Hunt VK5QX

ar

WIA Call Book 99 now on sale - don't miss out!

History

Harry Angel VK4HA Silent Key

Al Shaws Smith VK4SS
35 Whynot Street
West End, Brisbane QLD 4101

Australia's oldest, and it appears the world's oldest Amateur, who turned 106 last 14 December, fell 'silent key' around 1700 hrs UTC on 16 August 1998 (the weekend where VKs, ZLs and P29 stations remember our fallen Amateurs from both World Wars and other military conflicts).

The cremation, at Albany Creek, in Brisbane's north was conducted by Father Gallagher, himself an ex amateur operator holding callsigns VK2ARS and, later, VK4JG

Harry's daughter Lillian expressed the wish that Alan Shaws Smith VK4SS be present to say farewell to his much

respected mate whom he had known for 63 years. Harry and Alan first met when they sat next to each other to take the AOCP exam in 1935. Alan has not been in good health of late and requested that WIAQ Past President Rodger Bingham stand in his stead.

As Rodger said at the service, *"I am honoured to be the one to say good-bye to Harry, and offer condolences, on behalf of Alan and the Amateur Radio Community."*

Harry is survived by one daughter, Lillian Allsopp, seven grand children, and 14 great grand children.

Harry was born close to Fulham in the United Kingdom on 14 December 1891. He arrived in VK around 1912 from California, after a trip around Cape Horn as a very young sailor. One of VK4HA's jobs on board was to climb the vessel's 150 ft masts often in seas of up to 40 ft!

Harry enlisted in the 1st Battalion AIF at the outbreak of WW1 and was on the first troopship of Australian Soldiers to reach the Middle East - Anzac Henry Benjamin Angel, Private Number 1094.

He was posted to a communications unit based in the North African desert near Alexandria in Egypt. Eventually Harry fell seriously ill with pneumonia and after four weeks in a Cairo Hospital was repatriated home to convalesce. Rather than be

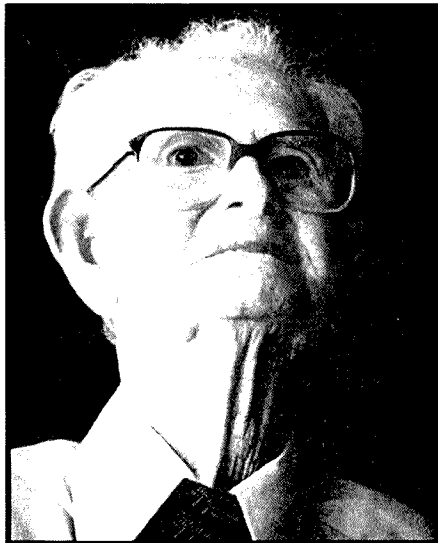


Photo courtesy of the Courier Mail, Brisbane

discharged, he served out the rest of the Great War as a Recruiting Officer.

After the war, he settled in Brisbane, where his fascination and knowledge from his Signals days in Egypt prompted him to open a radio repair shop in 1935, first at Toowong, later moving to the Grovely area. In the same year Harry sat for his AOCP exam, sitting alongside WIAQ Historian Al Shaws Smith VK4SS.

Harry's first Ham activity was that of Amateur DJ playing music. His priceless swag of QSL cards and personal letters of praise bear testimony to his great popularity with other hams and SWLs during this era.

This activity was curtailed in 1937 when the Post Master General's Department disallowed musical entertainment by Amateurs in VK.

When World War Two arrived, Harry Angel put his age back and re-enlisted, serving in the Radio Repair and Maintenance Unit based at Victoria Barracks, Brisbane.

A ham for 63 years, and an active DXer until his 100th Birthday, Harry was NOT known for the "10 second QSO". Rather, he was well known for a "rag chew" and as an ambassador of Amateur Radio for his adopted country, in particular VK4.

No nicer bloke ever pressed a key or mike switch!

A gentle, humble man, Harry served Australia in War and Peace, and will be sadly missed by all.



Photo courtesy of the Courier Mail, Brisbane

■ Operating QSLing! Direct, via the Bureau, or What?

Neil Penfold VK6NE, VK9YE, 9N1NE
QSL Manager VK9NYG (1981, 82), VK0CW and VK0HI (1982)
2 Moss Court
Kingsley WA 6026

High Risk Activity

When seeking confirmation of a DX contact, does the VK operator know if the country has a bureau, whether the DX operator is a member of the bureau or does the DX station accept cards "DIRECT ONLY"?

When the DX operator says via "call book address", does he imply no bureau cards? And we all have an international call book in the shack, don't we?

So you decide to send your card to his call book address. Expecting a reply by airmail you include something for return postage PLUS A SELF ADDRESSED ENVELOPE. However, some countries do not accept IRCs, not being members of the Universal Postal Union, nor allow their citizens to handle American "green stamps" (US Dollars).

Then there are countries where mail pilfering is rampant!

Emerging out of all this seems to be that QSLing is a high risk activity.

QSL Managers

Another aspect to surface in the past few years is the proliferation of QSL Managers who, for better or worse, now number in their thousands. So, one must be sure to listen carefully to the DX station in case he says "QSL to my manager", which he may overlook mentioning for a few QSOs if he is really busy.

Some operators have been known to give the QSL route only when asked, and then admonish the questioner for holding up the proceedings!

So, you have decided on a QSL route. Good luck!

Cost

But another factor has to be considered. Some stations and QSL managers desire that the printing costs of the QSL cards be covered as not many have sponsors who pay for the printing. Therefore, just one IRC or green stamp may not cover the cost of the QSL card AND posting.

As for postage costs, it's cheap from some countries to VK (60 cents from the US) and expensive from others (3 DM from Germany).

Wow, is this DX card chasing expensive!

**VK DXers should now
take a good look at
themselves, and become
proper DXers instead of
"Clayton" DXers.**

But, you go ahead anyway, because you want to be up there on the DX ladder, and you must have the cards to support your claims to countries worked. All this because you heard your callsign and "you're 5 and 9" given by the DX station during the melee (after calling the DX station for a good 45 minutes).

Strange! All signal reports given by the DX operator were 5 and 9! His receiver must be far better than mine!

VK DXpeditions

Let's pass on to the VK scene. QSL practice in Australia is strange. There are some VK amateurs, for reasons known only to themselves, who think it is their God-given right to request QSL cards

direct without even so much as a return envelope, let alone a stamp or the cost of the QSL card, or even a donation (however small) for a VK DXpedition.

Yet, for overseas DXpeditions they don't give it a second thought. Strange, when one thinks that it is more costly to mount an Australian DXpedition to some VK territories and islands than other more foreign places.

A recent survey of some Australian activities to various locations, and one to an overseas country, revealed that with 88% of VK requests there was only an SASE.

Let's take a look at DXpeditions where there are no four star motels, and so on. Most operators would have to spend four weeks away from home and work. It will cost around \$3000 per head for DXpedition expenses, \$2000 for personal expenses (plane flight to departure point), \$300 for meals and so on prior to and after the DXpedition. Also, one must not forget the gifts (read bribes) brought home for the spouse so one is allowed to go on another DXpedition!

There seems to be a great number of amateurs in Australia who think you must be rich because you go off to these DX locations. What a mistake. My guess is at least 95% of the people who go on DXpeditions are far from rich and, in fact, have to do a lot of saving to go. Granted, there are some who are certainly not short of a dollar, but many are not well off. It is known that one amateur, after saving for five years, went on a DXpedition because it was his dream. Now he is madly saving for another one!

Contribute!

Now, a bit of soapbox, as the Americans say.

Remember that this is aimed at VKs QSLing to VK organised and run DXpeditions.

To include just one extra 45 cent postage stamp to help support DXpedition/QSLing costs will not break any DXer in this country. It will, however, be well received and appreciated on the other end as it lightens the burden. VK DXers should now take a good look at themselves, and become proper DXers instead of "Clayton" DXers.

Support VK DX! Don't just sit there working it! ar

■ History

50 Years of the Geelong Amateur Radio Club

Dick Heighway VK3ABK
22 Leonard Street
Belmont VIC 3216

1998 is the 50th Anniversary year of the Geelong Amateur Radio Club Inc. Here is a reflection on 50 years of change in Amateur radio.

The GARC, as it is fondly known, was formed in 1948, at a time of change when life in Australia was converting from wartime reality to peacetime normality. But 1948 normality was very different from the world of 1998.

Wartime restrictions were still evident and rationing of goods, from petrol and tyres to food and clothing, had changed our habits. The Australian workforce wore boots, trousers and overcoats, ex-army or airforce depending on your attitude! Wartime rationing had limited our wardrobe, and an overcoat had previously required 40 clothes ration coupons; a whole years supply! An overcoat was a necessary item as, with few cars, we walked, rode bikes, or ran for the bus or tram.

Today's multitude of radio and electronics parts shops, selling all the now vital components, did not exist, and broadcast radio dealers could supply only a limited range of valves, resistors and capacitors for the home constructor. A major event was the opening of disposals stores, selling war surplus components ranging from tanks and Bren-gun carriers for the soldier settlers clearing land and building dams, to jeeps, trucks and motorcycles. And, for the new and renewed Ham, there was radio and electrical equipment that we could previously only dream about, mainly new and state of the art from wartime development.

For the amateur, used to building his own station from scratch, disposals transmitters and receivers, ranging from

portable to airborne, and a multitude of meters, motors and electrical instruments of all kinds were bought. To the new and old Amateur, this was like Christmas!

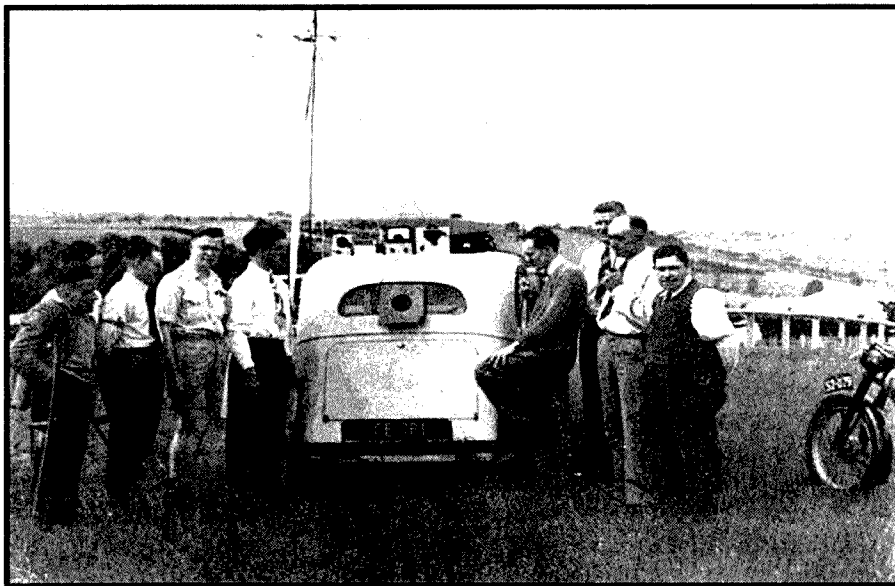
From a meeting of twelve licensed Hams in June 1948, the GARC grew in its first year into an active club, hosting our first WIA South West Zone Convention and, on the final meeting night of the year, 7 December, introduced the new club callsign, VK3ATL, on the 40

metre band. From a small rented room in central Geelong, and later, in 1951, a larger building and space for antennas, the membership increased as radio became better known as a worthwhile interest.

It's of interest to speculate on the availability of hobbies and pastimes today compared to those of 1948. Without the distractions of sport, computer games and all manner of media entertainment so common now, more time was found for educational hobbies, and Amateur Radio was one of the attractions for ex-servicemen and others who had noticed the growth in communications due to wartime developments.

The GARC was able to attract many who were engaged in the growing radio industry, and those who found the thrill of speaking to others around the world, which was not a very common experience in 1948, long before the Internet!

During the early years of the GARC, the interest of students at Geelong schools



Shown here, on 26 November 1949 at Ceres Lookout near Geelong, are some of the original members of the Geelong Amateur Radio Club, with Ken McTaggart VK3NW transmitting on the 576 MHz band across Port Phillip Bay to VK3RR at McCrae. This was a distance of approximately 75 km; not far by today's standards but worth Ken's journey from Glen Iris in 1949. The transmitter would most likely be push-pull RL-18 triodes as a modulated oscillator, and a 'super-regen' receiver, mounted on a family-man's luxury transport of the time! My affordable wheels seen at the right. Those present, seen from left to right are, Bill Barratt VK3WT (sk), Bill Romney, Fred Freeman VK3ALG (sk), Phil Grigg VK3APG (now VK2AGP), Dick Heighway VK3ABK, Ken McTaggart VK3NW, Jack Mathews VK3SY, Ed Kosseck VK3AKE (sk) and Bill Brownbill VK3BU (sk). Four months later, the dreamer shown with the pipe made the first VK3-VK7 2 m contact with VK7PF Peter Frith whose obituary was printed in *Amateur Radio* for September 1998.

found a ready made attraction in Amateur Radio. As courses finished, most of these young people moved on to employment and higher education in Melbourne, but during the years 1950-1965, a constant stream of young people passed through the GARC. Some of these are active today in Amateur radio and WIA affairs. Ron Cook VK3AFW, Ray Cowling, VK3ACR, and Ian Cowan VK1BG, all involved and active in WIA affairs, are only a few examples of student involvement in Amateur Radio and as members of the GARC.

These club members, like many others at this time, had acquired a 'no code' licence, or 'Z call', one of the most successful experiments in Amateur Radio. Many others could be listed, some of them still maintaining their membership of the club.

There are, of course, the previously suggested reasons for young people being less interested in Amateur Radio today. But it should also be remembered that Geelong, during the period mentioned, boasted a Gordon Institute of Technology, and several Technical

Schools which acted as a feeder for the Gordon, and also provided technical and trade training for anyone with an inclination for engineering.

Geelong no longer has a 'Technical School' as all have been converted to the ubiquitous 'Secondary College'; and The Gordon Institute of Technology is now devoted to a much more varied range of TAFE subjects. This, with a media showing little interest in science and engineering, is a possible reason for GARC youth membership in recent years being significantly reduced.

In 1968, during a period of activity by a young and enthusiastic membership, Harold MacMillan's 'wind of change' swept through the GARC, and a campaign was launched to acquire a permanent home for the club where facilities could be extended. Increasingly mobile Amateurs with get-up-and-go, and several parents with know-how, were able to work wonders.

A building program resulted in land being acquired at East Geelong, and a multifunction club complex, with space for towers and antennas, was built, giving the convenience and security of home ownership.

From this base in 1969 the GARC became a motivating force in the introduction of repeaters for the increasing use of FM radios, being replaced by taxi and tow truck firms as solid state designs made vacuum tubes obsolete.

After several sites, the present one at Mt Anakie became the home of VK3RGL in the two metre band. Today, the club also maintains a 70 cm FM repeater and a beacon in the 2 m band on the site.

The introduction of FM repeaters made a lasting impression on the Amateur bands and, along with SSB in the late 1970s, and Packet modes and Bulletin Boards ten years later, changed dramatically the operating habits of GARC members, and most Australian Amateurs.

As the radios available to Amateurs changed from adapted war surplus and superseded commercial transceivers to those specifically design-

ed for the purpose, the GARC proceeded to update the station equipment to follow modern trends, and became increasingly involved in DX contacts on the HF and VHF bands. Field day participation has been a feature activity of the club with strong teams securing many first placings on HF and VHF/UHF.

In 1980 the GARC introduced the first VHF/UHF field day, running concurrently with the annual Ross Hull contest. This has remained a major annual event, resulting in a continuing number of first placings for the club.

With the expert assistance of DX operators, in 1998 the GARC qualified for the HF DXCC award and now operates on all bands from 160 metres to 70 cm with modern transceivers, due to a team of experienced operators in one of the 'special interest groups' introduced in 1994.

These groups promote and assist in areas of interest such as HF, VHF, satellites, packet radio, and a group of retirees who meet at the club for coffee and a chat each Wednesday afternoon. Several of these are original 1948 members of the GARC who have been actively assisting the club through fifty years of service.

New members continue to keep the membership to an average of 68, assisted by AOCPT tutors and an examination program operating under the WIA sponsored scheme.

So, 1948 was a year of achievement for the GARC and for Geelong. Also for Australia with the launch of the first Holden motor car. For the world, the transistor was invented, and the 'Hot Big Bang' theory was proposed!

The GARC arrived on the scene in an epoch year and has become a success story in the world of Amateur radio.

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ALARA

Christine Taylor VK5CTY

ALARA Publicity Officer
16 Fairmont Avenue, Black Forest SA 5035
Packet: VK5CTY@VK5TTY

ALARA Contest

YLs and OMs both, remember the ALARA Contest on 14 and 15 November. The rules were printed in last month's *Amateur Radio*.

There are some changes this year. Multiple contacts with the same station on the same band may be made as long as there are at least two hours between contacts. This should make it easier for everyone to find contacts for as long as each band remains open.

For members who like to use CW, the Florence McKenzie Contest is now open to us all regardless of licence level. The only limit is the lower limit of at least five CW/CW contacts. Hopefully, some of us will have more than that, though.

What about getting your Club to participate, too? The last couple of years the Club section has been won by VK5GGA, a Girl Guide Radio group, so why not copy them and participate.

It really is a friendly contest. Please join in!

The Svalbard Meet

Gwen JW/VK3DYL

For the information of non-DXers, the prefix JW is allocated to the archipelago of Svalbard in the High Arctic, about 700 km north of Norway. Originally the island group was known as Spitsbergen but in 1925 it was renamed Svalbard, the old Norse name meaning "the land of the cold coasts".

After the YL World 96 Meeting in Berlin it was decided that the next international YL meeting would be held in 1998, in Longyearbyen, Svalbard. So it was there, in August, that 51 YLs (plus a few friends and OMs to carry baggage) gathered from 14 different countries to spend a few days in friendship and to experience, in 24 hour daylight, the wild, unspoiled arctic nature not far from the North Pole. And yes, it was cold; and no, we didn't see any polar bears!

We "took over" the very comfortable Svalbard Polar Hotel which had been transported from the 1994 Olympic Village at Lillehammer. We also had the use of the

radio shack, belonging to the Svalbard group of NRRL, consisting of a two-roomed hut with a TS-440S HF rig and a five element Fritzel FB antenna mounted on a 33 metre high mast; but no loo, and seeing the hotel was a 10 minute walk away

With so many keen operators, we were limited to an hour each to start with. As soon as the plane had landed and we had been taken to the hotel, the first scheduled operators dumped their luggage and dashed to the hut. Oh dear, a great big black hole, no signals in or out. "It was *great yesterday*", said Mathias JW5NM!

Anyway, during the night things came good again and happy faces were seen returning to the hotel at all hours of the day and night for the next four days and the call JW0YL was heard around the world. During my hour on the Saturday afternoon, I pointed the beam towards VK and chatted with friends who kindly kept skeds with me. It was great!

We were given a guided tour of Longyearbyen (duty free shopping!) and taken on a boat trip on the Isfjord to visit the Russian settlement of Barentsburg where coal is still mined. Even the climb up the 265 odd steps to the local hotel to partake of a typical Russian lunch did little to warm us up!

A suggestion for your next dinner party - you take black bread and pour boiling water on it. Add some sugar and lemon and leave it for a week. Filter away the bread and enjoy the liquid, if you can! The whiskey-on-the-rocks we drank at the foot of the nearby glacier using 10,000 year old ice was a distinct improvement!

Optional tour activities included glacier walking, fossil hunting, kayaking and helicopter flights, the last one being my choice. It was truly fascinating hovering over a glacier, peering down into the rugged, deep,

blue/green crevasses and shooting off photo after photo. A piece of interesting trivia: Longyearbyen has the northernmost golf course in the world. Fine to play on in summer but in winter, with 24 hour darkness and snow on the ground, the golfers have adopted an orange ball and wear miners' lights strapped to their heads to see where the ball went. Different!

On the Sunday night we had a Banquet at the hotel, the menu including Arctic char, reindeer meat and cranberry parfait. A few of the Nordic YLs wore colourful traditional costumes and the large Japanese contingent sang to us. They had only had a couple of practices, one being on the airport tarmac before boarding the plane for Svalbard. Someone seeing them there thought they must be some strange sect performing incantations before taking to the air! They did well.

The guest-of-honour was a Norwegian YL, Liv Amesen who, in 1994, became the first woman to ski solo to the South Pole. I was honoured to be seated next to her at the Banquet and was fascinated by her tales of how she trained for this event.

Another prominent YL present in Longyearbyen whilst we were there was Professor Kirsty Duncan who was leading a research team hoping to unravel the secrets of the 1918 flu virus which killed some 20-40 million people world-wide. This project involved examining the graves of seven young miners whose bodies were buried below the permafrost and thus, hopefully, preserved.

Seven ALARA members attended the Meet: Christa DJ1TE, Sigrid DL3LG, Angelika G0CCI, Ruth IT9ESZ, Unni LA6RHA, Carol WD8DQG and myself Gwen VK3DYL. I'm sure the rest were there in spirit. A big vote of thanks must go to the organising committee of Ruth LA6ZH, Turid



The seven ALARA members at the Svalbard Meet. Back row (l to r) Angelika G0CCI, Carol WD8DQG, Ruth IT9ESZ, Gwen VK3DYL, Sigrid DL3LG. Front row (l to r) Unni LA6RHA, Christa DJ1TE.

LA9THA, Unni LA6RHA and Ingrid LA-SWL who all worked non-stop for two years to make this Svalbard Polar YL 98 Meeting such a wonderful success.

At the YL-Forum on the Friday afternoon, it was voted that the next International YL Meeting would be held in the year 2000 in New Zealand.

Another piece of trivia to finish off with: a Norwegian guy I met told me his grandfather's brother had gone to a party in Oslo one night and was not seen again for 25 years. When asked where he'd been, he replied "Australia". Anyone with Norwegian ancestors?

YL Meets for 2000

BYLARA had hoped to host a World Meet in 2000 but have not had enough response to make it a possibility. However, they are hoping to have a BYLARA Convention in 2000, perhaps in conjunction with the Leicester Rally, in September. Keep an eye and ear out for more information.

If my information is correct, ZL-Land could be the host country for the World YL MEET, instead. Stay tuned. Maybe there will be two places to aim at for your holidays!!

World YL Meet in 1999

Preparations and plans are well under way for the YL Meet on the "Queen Mary" for the weekend 31 July and 1 August 1999 (with a couple of days before and after also available at special rates). In case you are going overseas then and haven't yet included the "Queen" in your itinerary, the YL to contact is Martha KA6TYO.

222 Net

June VK4SJ tells me that there are more overseas YL stations to be heard each week. She has heard several Gs, and some of the European girls, too. Perhaps we had all better make the time to participate.

An Apology

In the last ALARA column I mentioned that Kay G0KTC had become an SK. Fortunately for BYLARA, this was incorrect. It was Ernie G4SKT (OM to Kay) who passed away. Please accept this public apology for any pain or confusion the mistake may have caused. I hope Kay will accept the sympathy of all ALARA members in her loss.

Which One of These Are You?

Some members keep a club so strong
While others join just to belong;
Some dig right in, some serve with pride,
Some go along just for the ride.
Some volunteer to do their share,
While some lie back and just don't care;
Some do their best, some help, some make,
Some do nothing-only take.

AWARDS

John Kelleher VK3DP
Federal Awards Officer
4 Brook Crescent, Box Hill South, VIC 3128
Tel: 03 9889 8393

The ARRL Awards Committee has accepted a recommendation of the ARRL DX Advisory Committee to add the Temotu Province of the Solomon Islands to the DXCC list. The addition will be effective with contacts made beginning 2359 UTC on 31 March 1998 and after.

The DXCC Desk will accept QSL cards for Temotu Province (H40) beginning 1 October 1998.

Temotu Province includes the Santa Cruz, Reef, Duff and Vanikolo Island groups. They are located more than 356 kilometres from the main grouping of the Solomon Islands.

Further, and by the same process, the Marquesas Islands and Austral Islands have been added to the DXCC list. The additions will be effective with contacts made beginning 2359 UTC on 31 March 1998 and after. The DXCC Desk will accept QSL cards for both the Marquesas and the Austral Islands beginning 1 October 1998.

The total of DXCC countries (entities) is now 331, including P5 North Korea. The above information on new additions to the DXCC list was supplied through the efforts of Gwen VK3DYL.

ALARA Award

This award is issued by the Australian Ladies Amateur Radio Association, under the following conditions.

1. The award is available to licensed amateurs, and SWLs.
2. Contacts with members of ALARA since 30 June 1975 are valid.
3. No band or mode restrictions.
4. Contacts must be made from the same call area.
5. Requirements: VK/ZL - Contacts with 10 members in five Australian States; DX -

Some greet new members with a smile
And make their coming so worthwhile;
While some go on their merry way
With never a greeting or word to say.
Some help the club to grow and grow

Contacts with five members in four Australian States.

6. Stickers are available for each additional 10 (VK/ZL) or five (DX) members contacted. Special endorsements as to mode, etc are available.

7. Applicants must submit a complete log extract, certified by two other amateurs with all signatures appended. When an applicant is located in an isolated area with no possibility of obtaining proper verification, QSL cards are to be forwarded in lieu of a log extract.

8. The fee for the award is \$AUS3.00 or four IRCs and \$AUS1.00 for additional stickers.

9. The address for applications is: (Mrs) Jean Shaw, 10 Huntingsfield Drive, Hoppers Crossing, VIC 3029.

NZ - WARO Awards

General: Contacts may be made on any band, any mode, with the applicant's contacts all from the same QTH (except in the VHF section); but contacts via repeaters, and in WARO nets or contests are ineligible for these awards. QSLs are not required. Send log certified by one other licensed radio amateur to the Award Custodian with sufficient return postage for the award.

Main Award: ZL and VK stations work 12 WARO members resident in New Zealand; DX stations work six members. Contacts to date from 1 June 1969. Endorsement seals are available to ZL and VK stations for each additional 12 stations, DX stations six. Contacts with WARO DX members qualify for endorsements, but applications must contain at least three ZL contacts.

VHF Section: 10 VHF contacts with WARO members dating from 1 January 1979. WARO members and/or applicants may be home station, mobile or portable. Endorsements for each additional five.

SWL Section: ZL and VK list 20 contacts heard with WARO members, DX list 10, dating from 1 January 1979. List full log details with call signs of both stations concerned. Endorsements for each additional 10 (or five for DX) stations.

NZ WARO Century Award

1. Applications must contain full log details of contacts with 100 WARO members (DX members included) dating from 1 June 1987, and to be signed by one other licensed radio operator. →

When asked for help, they never say "NO".
Some drag, some pull, some don't, some do
Now take time to consider

Which one of these are you?

From BYLARA newsletter Sep 1998 ar

2. Contacts may be any mode, any band or mixed, and from any QTH, but each YL claimed must be a financial member of WARO at the time of the contact, and may be claimed once only.

3. Contacts made by repeaters, and in nets, will qualify, as will those made during WARO contests since 1 June 1990.

4. No QSLs required. Send list of full log details and \$NZ2.00 to: WARO Award Custodian, Caroline Sarten ZL2JP, 212 Coronation Avenue, New Plymouth 4601, New Zealand.

YLRL Certificates

Basic Rules

1. Contacts made through repeater devices or any other power relay method cannot be used for any YLRL certificate confirmation.

2. All contacts must be made from the same country.

3. Do NOT send QSL cards to the custodian! Two other amateurs must sign the log to verify that the QSL cards are in the possession of the applicant.

4. No charge is made for a certificate, but sufficient postage for first class mail, or a stamped legal-size envelope must accompany the application to cover the cost of mailing the certificate.

5. For the order in which the contacts must be listed, please check the rules for each certificate.

6. All inquiries should be addressed to the appropriate custodian.

7. Decisions of the custodians regarding interpretations of the rules as here stated, or later amended, shall be final.

Worked All States YL (WAS-YL)

Available to all amateurs. Contact must be made with a duly licensed YL in each of the 50 states in the United States. The District of Columbia may be counted for Maryland. There are no time or band limitations.

The call used is immaterial, provided it is licensed to the applicant. In qualifying for this certificate, it is possible to work the same YL in each of the 50 states.

The list of contacts must be arranged alphabetically by State and must include the call letters, date, band, mode, RS(T) and the YL's first name.

The Certificate Custodian is: Marcie Stilwell KC7DAT, 1421 NE Rygg Ct, Poulsbo WA 98370, USA.

Worked All Continents YL (WAC-YL)

Available to any licensed amateur in the world. Two-way communication must be established on the amateur bands with the six continents, North America, South America, Europe, Africa, Asia, and Oceania (which

includes Australia and New Zealand). Any and all authorised Amateur Radio bands may be used. Cross-band contacts ARE permitted. Contacts may have been made over any period of time.

Contacts with all six continents must be made with duly licensed women operators. It is not necessary for each contact to be a different YL. The call used is immaterial provided it is licensed to the applicant.

Submit a list of claimed contacts, including the full name of the operator (alphabetically arranged by continent), her call sign, and the date of each contact. Custodian for this award is: Leanna Shaberly KB8RT, 2635 West Sunrise Drive, Phoenix AZ 85041, USA.

YL-DXCC

Available to any licensed amateur in the world. Two-way communication must be established on authorised Amateur bands with stations (fixed or mobile), operated by licensed YLs from 100 countries on the current ARRL list of countries.

Any band or mode (except cross-band contacts) may be used.

A verified list must be in the same order as the ARRL countries list, and not alphabetically in any other way. The log must show country worked, station worked, date, time, frequency, RS(T) reports and the YL's name.

Endorsements: After receiving the certificate, a silver sticker will be awarded for contacts with YLs in 25 additional DX countries. List requirements are the same as for the original application.

The custodian for this award is: Marty Silver NY4H, 3118 Eton Road, Raleigh NC 27608, USA.

YL Century Club (YLCC)

Available to all licensed radio amateurs. Two-way communication must be established on authorised Amateur bands with stations mobile or fixed, operated by 100 different licensed women Amateurs. The same YL using different call letters will NOT count. Any and all Amateur bands may be used.

Contacts with YLs anywhere in the world are recognised, provided only that confirmations clearly indicate the stations were operated by duly licensed women Amateur Radio operators.

List of claimed contacts, including the full name of the operator, must be alphabetically arranged by LAST name, and also include the call sign, date, band, mode, and RS(T) of each contact.

Endorsements: Confirmations of contacts accompanied by an alphabetical list, as described above, from stations operated by additional YLs may be submitted for credit each time 50 additional confirmations are available. Endorsements will be made to the

original certificate when application is approved. Gold stickers will be awarded to applicants who have worked their additional contacts from the same country; otherwise, silver stickers will be awarded.

Custodian for this award is: Lee Henderson KB6MXH, 857 Tamarack Lane, Sunnyvale CA 94086, USA.

DX - YL

Available to licensed YL operators only, for working 25 different licensed women operators outside your own country, on or after 1 April 1958. USA and possessions are counted as separate countries, as well as Alaska and Hawaii. Any and all amateur bands may be used.

Contacts do not have to be with 25 different countries, just 25 different DX YLs.

The call is immaterial, provided it is licensed to the applicant.

The log must show date, time, station worked, frequency, her report, your report, mode, her name and QTH and must be arranged alphabetically by her last name.

Endorsements: Stickers will be awarded for each 10 additional DX YLs, subject to the same confirmation rules as above.

Custodian for this award is: Phyllis Davis KA1JC, 5282 Boyle Terrace, Pt Charlotte FL 33981, USA. ar



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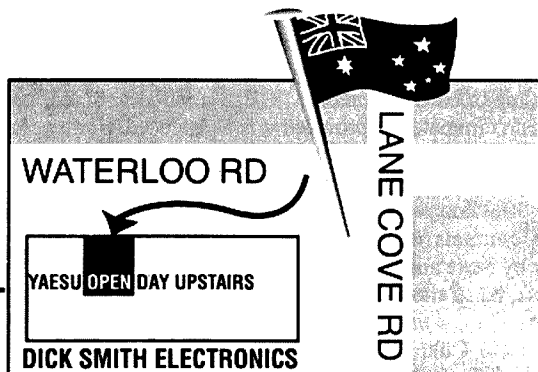
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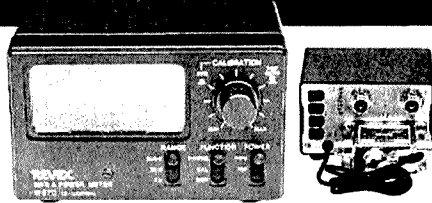
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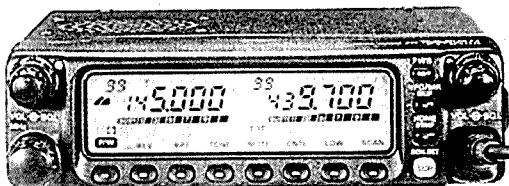
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The stunning new Yaesu FT-8100R is a state-of-the-art 2m/70cm band mobile transceiver that combines high power and the industry's most versatile memory system with an excellent wideband receiver and solid construction. Its US MIL-STD-810 shock and vibration rating is your assurance of years of reliable operation. Includes hand mic, mounting bracket and fused DC power cord.



Other features include:

- 198 memory channels
- 1200/9600 baud packet socket
- Inbuilt antenna duplexer
- Inbuilt crossband repeater facility
- Dual receive capability (VHF/UHF, VHF/VHF, UHF/UHF)
- Optional removable front panel

Frequency range: Tx 144-148MHz, 430-450MHz
Rx 110-550MHz, 750-1330MHz*

Output power: 2m: 50W, 20W, 5W
70cm: 35, 20, 5W

2 YEAR WARRANTY

D 3314

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YAESU

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The Yaesu FT-840 doesn't compromise performance like many current micro-rigs. You get full 160m-10m coverage with 100W PEP on SSB/CW/AM, continuous receiver (100kHz-30MHz), a large LCD screen and an effective noise blanker. The FT-840 is simple to use, with an effective SSB speech processor, IF Shift to fight interference, and DDS oscillators for cleaner transmit and improved receiver performance. Includes DC power lead and hand microphone...just connect your power supply and antenna and start having fun!

D 3275

2 YEAR WARRANTY

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B 3538

Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaco Street, Mentone VIC 3184
E-mail: vk3did@eudoramail.com

Space limitations do make it tight for publishing full details and results of all Contests. However, please consider looking on the Internet for details not published here. Sites to look at include <http://www.wia.org.au> and <http://www.uq.edu.au/radiosport>.

Thanks this month to ZL2BIL, ZL1BVK, VK4LAJ.

73 de Ian VK3DID

Results SARS Contest 1998

(posn)\mode\call\score)			
1	SSB	ZL1BVK	4256
2	SSB	VK2LEE	2809
3	SSB	VK3DID	672
1	CW	VK3DID	40

Results Waitakere Sprints 1998

Phone		
Posn	Call	Score
1	VK5NJ*	57
2	VK4DZ*	53
3	VK4JAE*	43
4	VK5SR	40
5	VK2XT	39
6	VK7JGD	33
7	VK3DID	25
8	VK5XY	21
9	VK6NU	16
10	VK2LEE	14
11	VK4LUV	1
CW		
1	VK5NJ*	23
2	VK2QF*	19
3	VK3DID*	17
Combined Phone + CW		
2	VK5NJ	160
11	VK3DID	84

Results 'Zip' Sprints 1998

(VK only)		
Posn	Call	Total score
4	VK5NJ	90
10	VK3DID	36

Contest Calendar November 1998 - January 1999

Nov	1	High Speed Club CW Contest	(Oct 98)
Nov	1-7	HA QRP Contest	(Oct 98)
Nov	7/8	WAE RTTY DX Contest	(Jul 98)
Nov	7/8	OK DX CW Contest	(Oct 98)
Nov	13-15	Japan International DX Contest (Phone)	
Nov	14	Spring VHF-UHF Field Day	(Oct 98)
Nov	21/22	CQ WW DX CW Contest	(Sep 98)
Nov	21/22	IARU Region 1 160 m Contest (CW)	(Oct/Nov 98)
Dec	4-6	ARRL 160 m Contest	(Nov 98)
Dec	12/13	ARRL 10 m Contest	(Nov 98)
Dec	19/20	Croatian CW Contest	
Dec	26/27	Stew Perry Top Band Distance Challenge	(Nov 98)
Dec	26 - Jan 27	Ross Hull VHF/UHF Contest	(Nov 98)
Dec	27	RAC Canada Winter Contest	
Dec	31	ARRL Straight Key Night	
Jan	9/10	Summer VHF/UHF Field Day Contest	(Dec 98)
Jan	9/10	HA DX CW Contest	
Jan	22-24	CQ WW 160 m DX Contest	

ARRL 160 m DX CW Contest

4-6 December, 2200z Fri - 1600z Sunday

Object is to work as many W/VE stations on 160 m CW as possible (1830-1850 kHz is recommended for inter-continental QSOs).

Categories are: Single operator (QRP to 5 W; low power to 150 W; high power over 150 W o/p); multi-operator, single transmitter.

Exchange RST; W/VE stations will add their ARRL/CRRL Section. /MM and /AM stations should add ITU region 1, 2 or 3 as applicable.

Score five points per QSO.

Multiplier is the total number of ARRL/CRRL sections, plus VE8/VY1 worked (max 77).

Final Score is total QSO points by multiplier.

Send logs not later than 4 January 1999 by mail to: ARRL Contest Branch, 225 Main Street, Newington, Connecticut, CT06111, USA. Logs on DOS disk in ASCII format welcome. Logs may also go to the ARRL BBS at 203-665-0090, or via the Internet to contest@arrl.org.

Certificates will be awarded to the top-scoring station in each category, in each DXCC country (note that the use of non-amateur means of communication to solicit QSOs is not allowed).

ARRL 10 m Contest (CW/Phone)

0000z Sat - 2400z Sun, 12/13 December

Object is to work as many stations worldwide as possible on CW, Phone or Mixed. Maximum operating period is 36 hours, and listening time counts as operating time.

Categories: as for 160 m Contest (see above).

Sections: CW only; Phone only; mixed.

Send RS(T), plus serial number; W/VE will send RS(T), plus state or province. CW entrants should stay below 28.3 MHz and avoid beacon frequencies. Entrants in mixed mode section may work the same station once on CW and once on Phone.

Score two points per Phone QSO, four points per CW QSO and eight points for CW QSOs with US novice or technician stations signing /N or /T (28.1-28.3 MHz only).

Multipliers are the 50 US states, plus District of Columbia (DC), plus Canadian provinces (see below "Canada Winter Contest"), plus DXCC countries except US and Canada, plus ITU regions (/MM and /AM QSOs, only).

Multipliers are counted separately on each mode.

Final score is total QSO points multiplied by total multipliers.

Send logs as above (ARRL 160 m CW Contest) by 13 January. Include a dupe sheet for 500+ QSOs.

Stew Perry Top Band Distance Challenge (CW)

1500z Sat - 1500z Sun, 26/27 December

This is a major challenge to one's ability to copy weak signals through QRN.

Band is 160 m.

Exchange is a four-character grid square (see *Amateur Radio*, December 1996, p16 for details of how to work out your grid square). RST is optional, but if given MUST be accurate.

Points for each contact depend on the distance between the two stations, which is computed by taking the distance between the centres of the two grid squares. Claim a minimum of one point per QSO, and add one extra point for each 500 km distance. [Example: a station 1750 km away will count for four QSO points.]

No additional distance for long path is allowed. If you work a station that does not know its grid square, you may claim only one point for the QSO. [CT, NA and TR software will support this contest, including QSO point calculations.]

Final score is the total number of QSO points. There are no country or grid square multipliers. Stations using five to 100 watts output multiply their score by two, and stations using less than five watts multiply by four.

Send logs postmarked by 27 January to: BARC, PO Box 1357, Boring, OR 97009, USA. Logs on disc in ASCII format are welcome; or logs may be e-mailed to tbdc@contesting.com. Logs will be checked using computer techniques to detect faulty callsigns, exchanges and not-in-log QSOs. "Busted" QSOs will be removed from both logs. Unique percentages will be reported in the results. Judges' decisions are final.

Region 1 160 m Contest (CW)

21/22 November, 1400z Sat - 0800z Sun

Please note the change of date and address for logs to: Ari Korhonen OH1EH, Kreetalankatu 9 as 1, 29200 Harjavalta, Finland.

Ross Hull VHF-UHF Contest 1998 - 1999

John Martin VK3KWA, Contest Manager

It is almost time for another Ross Hull Contest. The rules will be similar to last year's, but with two changes.

First, the six metre scoring. One of the aims of the scoring system is to keep the relative value of all bands reasonably equal. This is done with band multipliers, but six metres has an extra complication.

Sporadic E openings can provide large numbers of DX contacts which are as easy to make as local contacts. Last year's results show that a change is needed to make sure that scores are more consistent with the degree of difficulty of making the contact.

In the next contest, six metre scores will increase with distance up to 1000 km, and then drop back to one point for distances in sporadic E range (1000 - 2400 km). Assume that there will not be many tropo contacts over distances greater than 1000 km, and only a few short skip contacts below 1000 km. Any points lost on one side of the fence can be picked up on the other.

Another issue has been the length of the contest. Many entrants are happy with the four week duration, but others are not. I would rather see more activity for as long as possible, but a month is a long time if you are working hard to get the best possible score.

Another factor is the drop in activity in the second half of the contest over the last few years. So, although I am reluctant to do it, I propose to make the next contest shorter and see what effect it has.

I would appreciate your comments on the rules, especially on the changes discussed above, either with your log or in the mail. Please note that I am not on the Internet, but any e-mails to the Contest Co-ordinator (see above) will be passed on.

Please get on the air during the contest and see how you go. You can still have plenty of fun and make some new friends on the air, or catch up with some old ones.

The Contest

The WIA maintains a perpetual trophy in honour of the late Ross Hull and his pioneering achievements in the VHF-UHF field, especially the discovery of VHF tropospheric propagation.

The name of each year's contest winner is engraved on the trophy, and he/she will also receive an attractive wall plaque and certificate.

Certificates may also be awarded to top scorers in the various divisions of the contest. The contest is open to all amateurs.

Duration: 0000z Saturday, 26 December 1998 to 2359z Sunday, 11 January 1999.

General Rules: Single operator only; one station callsign only. One contact per station per band per UTC day. Cross-band, repeater and satellite contacts are not permitted. Entrants should abide by the band plans and not make contest calls or exchanges on DX calling frequencies or below 50.150 MHz. A contest calling frequency of .150 on each band is suggested. All rulings of the contest manager will be accepted as final.

Exchange RS(T) plus serial number. Serial numbers need not be consecutive, but consecutive contacts must have different serial numbers.

Scoring: For 2 metres and above, one point per 100 km or part thereof (ie up to 99 km, one point; 100 - 199 km, two points; etc). For six metres only, contacts below 1000 km as above. Contacts over 1000 km and below 2400 km, one point; contacts of 2400 km or more, 10 points.

Multipliers are:

6 m 2 m 70 cm 23 cm 13 cm Higher
x 1 x 4 x 7 x 10 x 13 x 16

Awards: The overall winner will be the entrant with the highest all-band score. Awards will also be made to the top scorers in each of the following categories: 6 metres;

2 metres; 70 cm; 23 cm; 13 cm; 9 cm; and higher bands.

Penalties: Minor errors in distance estimates or score calculations will not incur any penalty. Repeated abuses of calling frequencies, or any contest operation below 50.150 MHz, will lead to disqualification.

Logs must contain the following for each contact:

- Date and UTC time.
- Station location (if operating portable).
- Frequency and callsign of station worked.
- Location or Maidenhead locator of station worked (if not QTHR).
- Reports and serial numbers sent and received.
- Estimated distance worked and points claimed.

Separate scoring columns, or separate logs, for each band would be helpful. The contest manager reserves the right to correct distance estimates on the basis of computer calculation.

Logs must be supplied with a cover sheet containing:

- Operator's callsign, name and address.
- Station location (if different from the postal address).
- A scoring table set out as the example below.
- A signed declaration that the station has been operated in accordance with the rules and spirit of the contest, and that the contest manager's ruling will be accepted as final.

Send logs by Monday, 2 February 1999 (early logs would be appreciated) to: WIA Ross Hull Contest Manager, PO Box 2175, Caulfield Junction, VIC 3161.

Sample Scoring Table

Band	6	2 m	70 cm	etc
Score	xxx	xxx	xxx	xxx
Band				
Multiplier	x 1	x 4	x 7	x x
Total	xxx + xxx	+ xxx	+ xxx	+ xxx
	= xxxxx (GRAND TOTAL)			

Note on Calculating Distances

Absolute accuracy is not required. All you need to know is whether the other station is above or below the nearest multiple of 100 km.

An easy method is to use a compass to draw 100 km circles around your location on a map. Better estimates can be made from six-digit Maidenhead locators, using a simple computer program published in December 1996 *Amateur Radio*.

A more accurate and fully error-trapped program is available, which also includes calculation of bearings and conversion between latitude/longitude and Maidenhead locators. It is available in IBM format only from John Martin VK3KWA (QTHR), if you send a floppy disc (any format) in a mailing box, together with return postage. ar

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Geomagnetic disturbances are not equally likely at all times of the year. Those who listen to the daily propagation reports are very much aware of the variation of the frequency of geomagnetic storms. The occurrence of disturbances at major storm levels is most likely near the equinoxes (21 March and 21 September), and statistically March/April and September/October are the months when these occur.

If one believes what one reads in the newspapers, then there are even worse times to come. A small article appeared in the *Sydney Morning Herald* on 17 September 1998, written by Julie Robotham and titled "Lights and Action: Sun a Magnetic Performer". Here is the text for your information:

"Red lights in the sky, satellites veering off course, electricity grids sputtering and dying. It sounds apocalyptic, and in a way it is. The Sun is building up to something big: in three years its magnetic poles will reverse. Its south will become north and vice versa.

"The cosmic somersault may have all kinds of consequences on Earth, including the appearance of Aurora Australis, or Southern Lights, which have been visible recently from Canberra and the South Coast.

"Australian Geological Survey Organisation chief scientist Dr Phil McFadden said Aurora Australis contained "beautiful pastel reds, blues and greens"

"Sydneyiders are unlikely to see much of the aurora thanks to the saturation of city lights and the city's more northern position. This might change as the sun's magnetic activity starts to peak. This will happen months before its actual polar inversion which occurs in 22-year cycles.

"Spots of magnetic intensity on its surface will intensify further, sending out solar flares - "a vast dumping of charged particles in space", said Dr McFadden.

"This interacted with magnetic fields on Earth, resulting in magnetic storms. These caused auroras and could send communications haywire in places closer to the poles such as northern Canada."

All fascinating stuff. If I remember correctly, the Victorian gas explosion at Longford occurred at about 1230 pm local time (0230 UTC) on Friday, 25 September 1998. What caused it? Nobody knows! However, it is known that a geomagnetic disturbance was reported around that time, at major storm level. Any connection? Who knows? The mystery deepens. . .

Rowley Shoals VK9 - 99

Preparations are well in progress by Malcolm VK6LC and his group for a major IOTA DXpedition to Rowley Shoals in the Indian Ocean (see *Amateur Radio* June 1998).

Rowley Shoals are located approximately 300 km due west of Broome (population approximately 11,000) in the tropical far north of Western Australia. The shoals consists of three atolls that lie north-south. The most northern is Mermaid Reef, 29 km to the centre is Clerke Reef and 42 km to the south is Imperieuse Reef (17° 35' S and 118° 55' E) which is the destination point of the DXpedition.

Imperieuse Reef has the only Automatic Light and Weather Station for this group and is approximately 18 km long and 10 km wide. Within the reef the only semi-permanent land maintained above the high water mark is Cunningham Island, situated about 379 km west of Broome. The island is a longitudinal sand cay approximately 800 metres long and 250 metres wide, positioned at the northern tip of the reef where the automatic light and weather station is located.

The expedition's on-shore base will be at Broome from where the planned departure of the expeditioners will take place in about

How's DX? Columnist Needed!

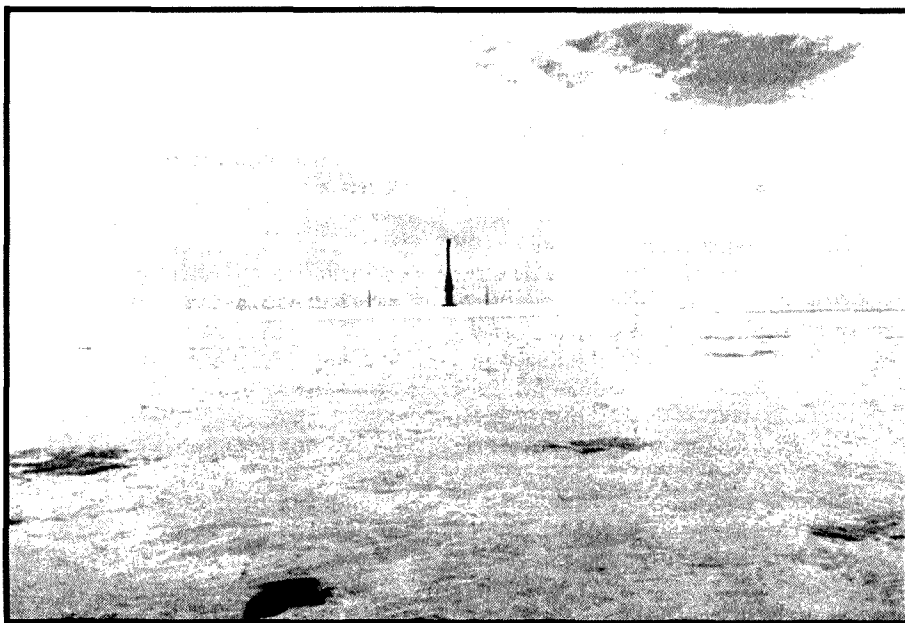
It is with deep regret we advise that Stephen Pall VK2PS, who started contributing to the *How's DX?* column in 1982, and took over the column in 1989, has announced his inability to continue with the column after the December 1998 issue of *Amateur Radio* magazine. Fortunately, however, Stephen's changed circumstances will allow him to continue to contribute articles to *Amateur Radio* about DX subjects from time to time.

Are you a keen and active DXer (preferably with packet and Internet facilities, although these are not essential requirements), who would like to assist *Amateur Radio* magazine, the WIA, and other DXers by compiling the *How's DX?* column for *Amateur Radio* magazine each month?

If so, *Amateur Radio* and/or Stephen Pall VK2PS are very keen to hear from you as soon as possible. If you would like to help but have concerns about writing the column, please talk to us!

It would be very disappointing if even one issue of *Amateur Radio* was published without the *How's DX* column!

10 months time from 20 until 26 September 1999. The sea voyage will last about 14 to 16 hours, depending on weather conditions, on a commercial marine charter boat which



Imperieuse Reef, looking north west inside the reef at high tide. [Photo courtesy of the Department of Conservation and Land Management, the managers of the area.]

is 16.85 metres long with a cruise speed of 22 knots.

The boat comes with a friendly price tag of \$AU13,000 for six days. The expedition arranged a share charter to reduce the overall up-front costs. The boat has a crew of three, can accommodate up to 10 passengers and will carry approximately 2000 kg of DXpedition equipment.

A special Government scientific permit has been obtained to carry out amateur radio experiments and Malcolm has thanked the Australian Communications Authority, in the name of the expedition members, for the assistance in securing a special VK9 callsign for the activity.

The expedition intends to operate dual Yaesu stations with amplifiers, using a variety of VK6LC designed phased verticals on 20 and 40 metres, a Butternut multi-band vertical, and log periodic Yagis for 15 and 10 metres.

The members of the multinational team are K9PPY Jim, CTIEEN Sam, VK2PS Steve and VK6LC Mal, the team organiser and manager.

On-shore support will be provided by Dave VK6DLB and Michael VK6BHY. All the

international guest operators are experienced IOTA DXpeditioners.

It is proposed to have a 24 hours operational schedule with dual stations on 10, 15, 20, 40 and 75 metres both in the SSB and CW mode.

Direct QSLing (include return postage) will be handled by Gianni I1HYW, PO Box 1, 10060 Pancalieri, Torino, Italy. There is a Web page on the Internet from which further information can be obtained, http://www-dx.deis.unibo.it/htdx/iota/vk9_99.html.

This will be the most ambitious IOTA expedition organised by Mal VK6LC to an Australian island group, which has never been activated before and where the general public has no access at all. Costing of the expedition's budget is not yet finalised but the final figure will run into many thousands of dollars.

Major sponsors of the expedition are the Italian Diamond DX-Club, the RSGB IOTA Committee, and ATN Antennas (Australia).

Naturally, financing such an undertaking is not an easy task. The expedition members have already made substantial contributions to the cause, as boat charter contracts had to be signed a year in advance and pre-departure accommodation had to be secured also.

Broome is a popular holiday resort in the month of September when the big game fishing is in full swing and the big game fishing boats are fully booked out.

The expedition is appealing to DXers, especially to those who support the IOTA program, for cash donations of any size.

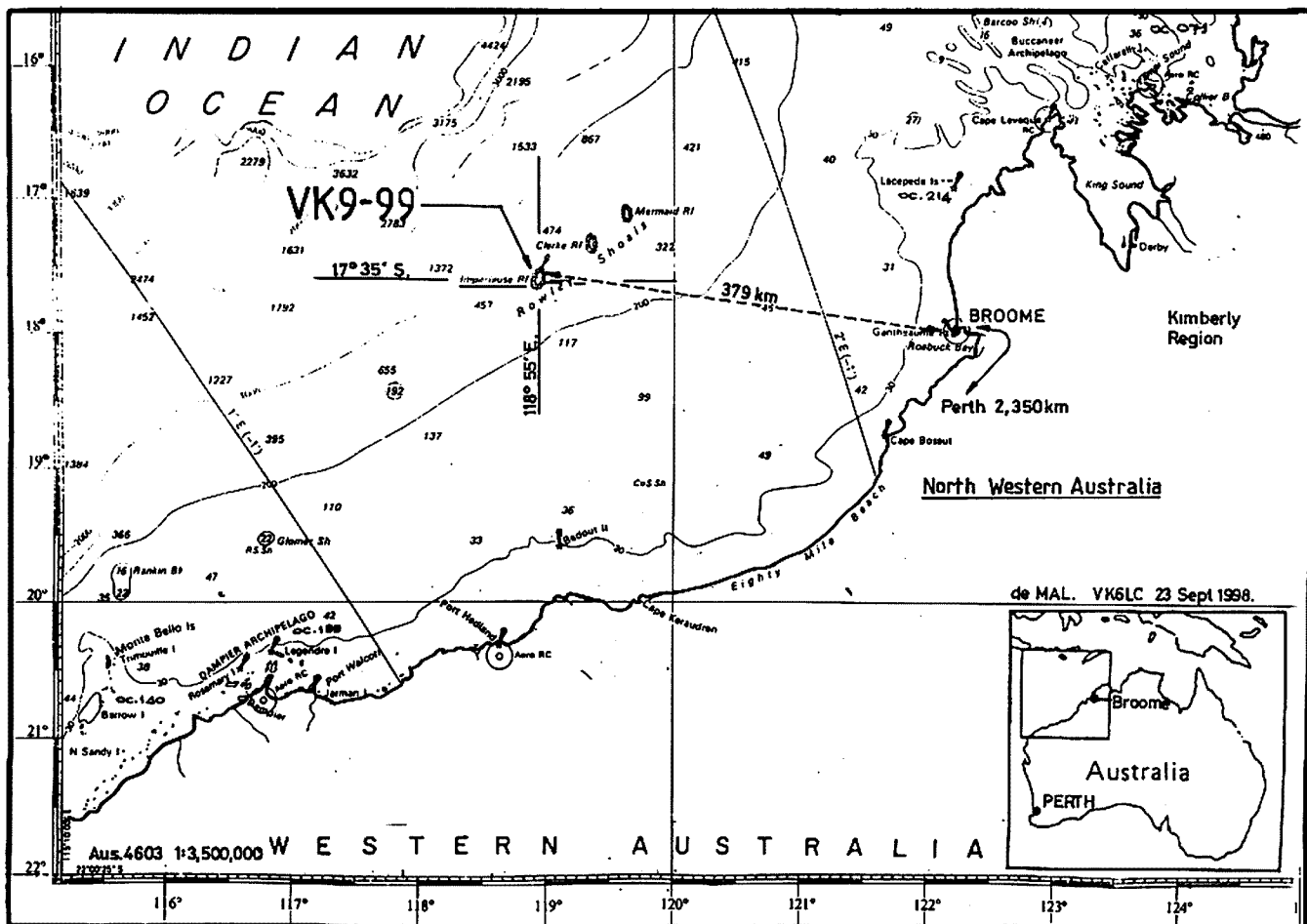
A special DXpedition bank account has been established to which donations can be made through the bank transfer system. Details of the account are; VK9-99, Malcolm K Johnson, Commonwealth Bank of Australia, 187 High Road, Riverton Western Australia 6148, account No 76 6164 5005591.

If you are able to assist, please do so, and drop a line of encouragement to Malcolm whose address is Malcolm K Johnson, 9 Abinger Road, Lynwood, Western Australia 6147.

St Peter and St Paul Rocks - ZYO

The "Natal DX Group" have announced that they will be active from these Rocks in the first week of March 1999, with four operators.

They plan to leave Natal, Brazil, in the last week of February with the operations to



A map showing the location of the Rowley Shoals, site of the proposed VK9-99 IOTA DXpedition in September 1999.

commence four days later. The activity will last 12 days or two full weekends.

All bands and modes will be activated. The call signs will be ZY0SB for SSB/RTTY (QSL via PS7KM), and ZY0SZ (QSL via PT7AA) for CW. The total budget will be \$US11,000, with 70% allocated for boat rental. It is reported that the Brazilian Navy and Brazilian Institute for the Environment are going to restrict future access to the islands.

Australian Antarctica - VK0TS

When you read these lines, Tom, who in 1997 spent one year on Macquarie Island, will be on board ship en-route to his new assignment at Davis base, Australian Antarctica.

The departure for "Voyage 4", the main change-over voyage for Australia's Antarctica bases was 29 October and it will take about two weeks, hopefully most of it smooth sailing.

Tom decided to keep his VK0TS call for his activity from Davis, which he thinks will not start before 1999 due to the busy summer season.

Before departure, Tom underwent several training courses in frame relay installation, photocopier and fax maintenance, computer training, first aid training, PABX system handling, fire fighting, adventure training and last, but not least, two weeks anaesthetist training in case a medical emergency arises.

Marquesas and Austral Islands Added to DXCC List

The ARRL Awards Committee has accepted a recommendation of the ARRL DX Advisory Committee to add Marquesas Island and the Austral Islands to the DXCC List.

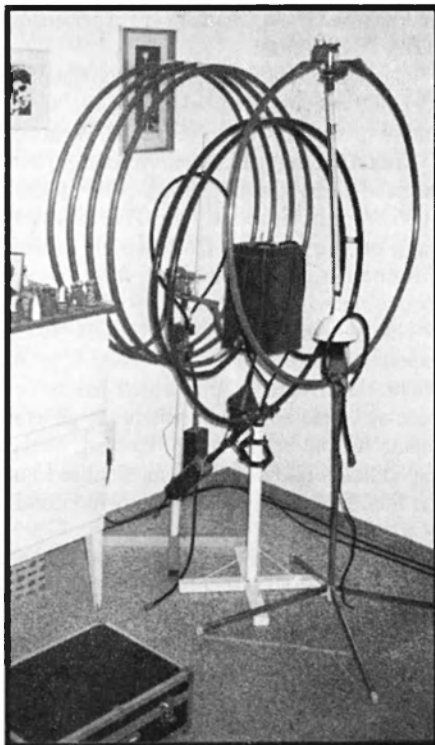
The additions will be effective with contacts made beginning from 2359 UTC on 31 March 1998. The DXCC Desk will accept QSL cards for both the Marquesas and the Austral Islands beginning 1 October 1998.

Indoor Antennas in Apartments

Many a DXer who, due to a change of circumstances, has to move into an apartment building (home unit in common parlance) gives up the hobby because he/she is not allowed to erect HF antennas.

Mike VK6HD had a CW QSO with Ulf DJ5QY on 160 metres, and he gave Ulf a 3/5-5-9 report due to QRM. Mike was surprised to discover that Ulf has worked Europe, North America, Asia and Africa, and now Australia, on 160 metres from an apartment building with an indoor four turn loop antenna and 50 watts.

The photograph shows DJ5QY's indoor "antenna farm". Four turns on 160 m, two



The indoor loop antennas of Ulf DJ5QY.

turns on 80-30 m, and one turn on 20-10 m. The antennas are used in the corner of his bedroom (one at the time) one metre distance from the neighbour's wall; the calculated efficiency level is less than 5%.

I had a similar experience in September this year. I had a 20 m CW contact with Ernest DJ6TR. I gave him a 449 report and received from him a 569 report. Within two weeks a direct card arrived from Ernest on which he informed me that he lives in an apartment, three metres above the ground and uses a magnetic loop indoor antenna with 80 watts input. So, there is still hope for those DXers in changed circumstances who are determined to continue DXing.

Future DX Activity

* **Monaco - 3A.** Luc I1YRL will be active from Monaco in November as 3A/I1YRL.

* **Pakistan - AP.** Nasir AP2NK is active on 20 m CW around 0130 - 0300 UTC at the bottom (14010-14030 kHz) of the band.

* **Morocco - CN.** Ben DL6FBL will be active between 25-29 November in the CQ WW CW Contest as CN8MC or as CN2?. QSL via home call via the Bureau.

* **Korea - HL.** Special event stations D98WCX and 6K98WCX will be active until 10 November. QSL via the Korean QSL Bureau or direct to HLFOP, PO Box 97, Kyongju, 780-600, Korea.

* **Singapore - 9V8.** Special event station 9V8SEA will be active between 13-15 November during the "SEANET 98" convention.

* **Mayotte - FH.** Bruno TK5PB will be on the air as FH/TK5PB from 12-25 November on SSB. QSL via home address: Bruno Padey, Le Magenta 1, F-20196, Bonifacio, France.

* **Vietnam - 3W.** Special event station XV300SI is on the air until 31 December to commemorate the 300th anniversary of Ho Chi Minh (Saigon) city.

* **South Africa - ZS75.** The "South African Corps of Signals" will be celebrating their 75th Anniversary in November. ZS75SI is active during November to celebrate the event. QSLs direct only, with "one green stamp" or two IRCs, to Edwin Musto ZS5BBO, PO Box 211032, Bluff, 4036, South Africa.

* **Togo - 5V.** Roger G3SXW reports that eleven operators will activate 5V7A in the CQ WW CW contest between 28 and 29 November. Seven one kilowatt stations and 17 antennas will be used.

QSLs via the Bureau via GM4FDM, or direct to Tom Wylie GM4FDM, 3 King's Crescent, Elderslie, Renfrewshire, PA5 9AD, Scotland.

* **Barbados - 8P.** John K4BAI will be on the air from Barbados between 24 November and 1 December as 8P9HT. During the CQ WW CW contest he will be operating as 8P4Z. QSL via John T Laney III K4BAI, PO Box 421, Columbus, Georgia, 31902-0421, USA.

* **Sri Lanka - 4S.** Mario HB9BRM is now on the air as 4S7BRG. QSL via home call.

* **Jersey - GJ.** Chris G0WFH will be on air from 4 to 11 November as GJ0WFH. QSL via home call.

Interesting QSOs and QSL Information

* **ZA0IS - Jovan - 14269 - SSB - 0545 - Sep.** QSL via Arben Goxhaj ZA1K, PO Box 1, Westbrook, MN-56183 USA.

* **4S7DF - Dammika - 14172 - SSB - 1199 - Sep.** QSL via the Bureau.

* **HK135P - Luis - 14229 - SSB - 0606 - Sep.** QSL via HK6LRP via the Bureau.

* **CX3AL - Leo - 14192 - SSB - 0711 - Sep.** QSL via Leonardo Correa Gordiola, Juan Ortiz 3276, Montevideo, or via the QSL Bureau.

* **FW5XX - Marcel - 14195 - SSB - 0649 - Sep.** QSL via ON4QM Marcel Dehonin, Everstraat 1230, Sint Stevens, Woluwe, B-1932 Belgium.

* **OA4PQ - Alfonso - 14164 - SSB - 0520 - Sep.** QSL via Alfonso J Alvarez Calderon, PO Box 538, Lima, Peru, South America.

* **TF3GC - Halldor - 14226 - SSB - 1203 - Sep.** QSL via Haraldur Christensen, MOA Flat 8, IS-210, Gardabaer, Iceland.

* **PJ7SA - Samuel - 14164 - SSB - 0520 - Sep.** QSL via PO Box 366, Phillipsburg, Sint Maarten, Netherland Antilles, Caribbean.

* **CU3AD** - Joe - 14240 - SSB - 1052 - Sep. QSL via the Bureau.

* **5R8FU** - Ake - 14188 - SSB - Sep. QSL via SM0DJZ Jan Hallenberg, Siriusg 106, S-19555 Mersta, Sweden.

* **5W1SA** - Atsu - 10103 - CW - 0623 - Sep. QSL via JH7OHF.

* **VK9LNQ** - Toshi - 1828 - CW - 1205 - Sep. QSL via JM1KNQ.

From Here and There and Everywhere

* **Thailand**. Princess Sirindhorn, who is third in line to the Thai throne, has received her amateur licence with the call HS1D.

* **Nepal** - 9N. According to DX sources the following operators have been issued with new licences in Nepal: Khatri 9N1AB, Navin Mainali 9N1AC (previously 9N1CW), Sunuwar 9N1AD, and Gourish Kharel 9N1AE.

* **QSL Manager**. Bill K1WY, PO Box 2644, Hartford, CT 06146, USA is QSL manager for the following DX stations: 5R8ET, ET3BT, GI6YM, P29CC, S21J, TF7GX, TF8GX, UA0DC, UA0ZBK, UA0AOZ and ZL3KIM.

* **Tumen River Delta**. The South China Sea DX Team has activated, with the assistance of the Beijing DX Club BY1A, the special economic zone located in the Tumen River delta region which includes areas in Russia, China and DPR Korea. The callsigns used were BT2HC and UE0LEZ. QSL BT2HC via KU9C, and UE0LEZ via UA0MF.

* **Libya** - 5A. Special event station 5A29 has celebrated the 29th anniversary of the "Revolution in Libya". QSL via 5A1A.

* **QSL Info**. John K4BAI is QSL manager for the following Barbados stations: 8P9HR, 8P9HT and 8P9Z.

Brian VK4LV reports that he received the following QSL cards, all within 2-5 weeks from posting: 3W6WE, KG4AU, C6ACN, D2BB and ZB2AZ.

* **TM0SEF** was a French special event station active from 3 to 17 October, celebrating the science week in France. QSL via F5FLO.

* **QSL from the past** - VP8. Mike VK6HD reports that in 1977, 21 years ago, he worked VP8PL in the South Orkney islands. In 1988 he noticed that he had never received a QSL card for his CW contact. Searching for a QSL address he discovered that VP8PL became a silent key in 1982. After many years of further search, he found that G3LIK still has the old logs and cards for the VP8PL activity in South Orkney and South Georgia. Mike was very happy to receive the missing CW QSL card for his DXCC.

G3LIK indicated that if any VK needs a card from the VP8PL activity, and they are

in the log, he will be happy to oblige. His address is: Mike Puttick G3LIK, 21 Sandyfield Crescent, Cowplain, Waterlooville, Hants PO8 8SQ, England.

* **Antarctica**. If you worked Dave KC4AAA at the American Scott Base, your QSL should go via NC6J.

* **Sao Tome and Principe** - S9. John VK2DEJ reported a QSO with Gary S92AT SSB on 20 metres. Gary works for the Voice of America station and his QSL manager is NJ2D.

* **Palestine** - ZC6. Dr Sami was heard working from the Gaza strip in September on 14243 kHz. QSL via K9JJR. Palestine is not recognised as a separate DXCC entity. The situation might change in May 1999, when it is envisaged that the country might regain full independence.

* **Brazilian IOTA Islands**. PQ1Q was active from Grande Island SA-029. QSL via PP5LL. PV2E was active from Santo Amaro island SA-071. QSL via PY2YW. PR2YL and PS2S were on the air from Comrida Island SA-024. QSL via PP5LL Jaime Lira do Valle, PO Box 88, Florianopolis, SC, 88010-970.

Eritrea - E3

It was reported that the local licence fee is \$500 per participant which will make the activity quite expensive.

* **Iraq** - YI. According to Pierre HB0AMO, who spent three months in Iraq and visited the Radio Club of Baghdad YI1RS in July 1998, there are about 30 Iraqi amateurs, but they are only allowed to operate from the Club station using their own callsign. The equipment is an old fixed frequency system and the Club is mainly active between 1200 - 1400 UTC on Fridays.

* **Cambodia** - XU. Mako XU7AAK is active on 20, 17 and 15 m, mostly on CW. QSL via JA10EM.

* **Qatar** - A7. Khalid A71EA was heard on 20 and 15 m, mostly on SSB, with a list operation. QSL via PO Box 20606, Doha, QATAR.

* **Johnston Island** - KH3. Alex KH6HE is active as KH3/KH6HE from the Club station on 14240 kHz, and other times on 28450 kHz. QSL via home call.

* **Navassa** - KPI. The N1V DXpedition hopes to receive their landing permission soon for a November/December activity.

* **Comoros** - D68. Herman DJ2BW will be on the air from 26 October to 7 November as D68BW. QSL via home call.

* **Sao Tome & Principe** - S9. Two Swiss amateurs, Chris HB9CYV (S92YV) and Martin HB9CYN (S92YN), will be active from 26 October to 7 November.

* **Tokelau** - ZK3. Ron ZLIAMO will be on the air from around 18 October for 3-4 weeks, probably as ZK3RW. QSL direct only to ZLIAMO.

* **Rodriguez Island** - 3B9. This activity, according to Frank Smith AH0W, has been postponed to a later date, so as not to clash with the ZL9 Campbell Island expedition which was planned earlier to take place in January 1999.

* **Eastern Kiribati** - T32. Chuck T32NCC is an active station on Fanning Island with a TS-50 and an old car battery which is charged by solar cells. He was heard on 12 and 10 m around 0200 - 0300 UTC. Mail takes about seven months to reach the island.

* **Pratas** - BV9. It has been indicated that this activity might take place in October. The latest report says that there is no further progress, "but the possibility is still alive".

* **Niger** - 5U. Dan K4SET has now received his proper call, 5U7DG. Previously he was issued with the irregular call of 5UDAN by mistake. Dan uses a long-wire antenna at present but hopes to have a TH6 up soon.

* **Eritrea** - E3. A new DX group, called Space A DX Group, is planning to be active from here early in November with 20 operators from 10 different countries. It was reported that the local licence fee is \$500 per participant which will make the activity quite expensive. QSLing will be handled by INDEXA c/o K4JDJ.

QSLs Received

XW1 (11 m - JH1AJT); HR1LW (6 w - JA1LW); TG9GJG (2 m - Julio Gonzales, PO Box 24, Corro, Central Guatemala City, Guatemala); RA2FBC (12 m - DF4BV); FT5XN (3 m - F6PEN); 9U5CW (2 m - EA1FFC).

Thank You

Many thanks to all who supplied me with news and other information which I appreciate very much. Special thanks to VK2DEJ, VK2EFY, VK2KCP, VK2KFU, VK2JF, VK2XH, VK4LV, L40370, VK6LC, VK6HD, VK0TS, LUIYU, *ARRL DX News Release*, International DX Association (INDEXA), *OHIO/PENN.DX Bulletin*, *QRZ DX*, *The 425 DX News*, *The DX Newsletter*, *The DX News Magazine*, *The Sydney Morning Herald*, and the *DX Magazine*.

ar

Spotlight on SWLing

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Pounding Brass

Stephen P Smith VK2SPS

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Gravity Cells

Lately, I've received a number of requests from readers in relation to 'Gravity Cells'. Instead of writing to you individually, I thought it would be better to write about them in this column, as other readers may have a similar interest.

It is known that when dissimilar metal plates are partly immersed in a liquid (for instance, diluted sulphuric acid), a voltage appears between them. The extent and nature of this electrification varies with different metals, some metal pairs giving more voltage than others.

What follows is based on telegraphy handbooks of the late 1880s era.

One of the commonest types of cell used was the Callaud or Gravity cell. This Gravity cell consists of copper and zinc plates, with copper on the bottom (the positive pole), and zinc at the top (the negative pole).

The copper plate is in a solution formed by dissolving bluestone crystals or blue vitriol in water. Bluestone is commonly known as copper sulphate. The zinc plate is immersed in water but a solution of sulphate of zinc forms around the zinc plate.

The Gravity battery is usually set up in glass cells about 6" in diameter by 8" in height. As mentioned above, the copper plate sits in the bottom and the zinc plate is suspended by a wire hanger from the rim of the cell. An insulated copper wire is connected to the copper plate forming one of the terminals, zinc being the other.

The zinc plate is called the "Crow Foot" although, personally, I think it looks nothing like the foot of a bird. Bluestone crystals are placed in the bottom of the cell; the amount depends upon the work required by the battery, being about 3 lbs for local stations. Water is poured into the container to cover the zinc plate. The bluestone dissolves quite rapidly in the bottom of the cell. Occasionally star shaped zinc plates were used but were not in as wide spread use as the crow feet types.

The battery will develop full strength in about two days. This time may be reduced considerably by short-circuiting the battery terminals.

Owing to the respective specific gravities of the two solutions, they do not speedily mix. Sulphate of copper, being the heavier of the two solutions, remains at the bottom of the container, hence its name 'Gravity Cell'.

The solutions will eventually mingle unless the load on the cell is sufficient to use up the

(continued on page 45)

is their usual frequency and a disused USB feeder, harking back to the days of Cable and Wireless, is taken out of mothballs.

Maritime HF Still Viable

The first of February next year should see many HF Marine radio stations stop employing international Morse. The reality is that it will continue through some senders because some ships will still be relying on CW, particularly in Asian and African regions where stations have not installed SITOR or Clover.

HF is still viable because the cost of satellite communications remains prohibitive. There are regions where INMARSAT does not service the maritime industry. However, the new Iridium satellites will provide world-wide coverage, allowing anybody to communicate in identical fashion to existing mobile telephones. At present, the rates on Iridium phones are still very expensive so I would expect maritime users will continue to patronise the existing HF stations.

One well known Marine HF station, that has been operational since the early days of radio, is Portishead. Originally located in the western part of England, the senders are strategically placed around the UK.

The operators now want to phase this facility out, preferring existing users to switch over to other modes such as Satcomm, although some channels will be retained for maritime safety and meteorological bulletins.

Globe Wireless

The American Marine Communications company, Globe Wireless, has been steadily acquiring various HF facilities throughout the world.

Now they have purchased a Philippines coastal HF station, which brings to 19 their world-wide chain of HF stations. This includes Perth Radio, VIP, which is still operational.

Well, that is all for this month. I hope that your listening will be productive.

ar

Radio Norway International

Recently, Radio Norway International reluctantly announced that they were suspending their English language programming. This was only heard at weekends but now has been permanently deleted from their output. The reason was funding difficulties.

Of course the station is continuing to broadcast in Norwegian as well as relaying Radio Denmark from Copenhagen. It is a pity that these short English bulletins have disappeared. We hope they will be restored.

Radio Netherlands

At the end of October, many, if not most international broadcasters, made significant alterations to their schedules. This was in line with most of the Northern hemisphere reverting to standard time.

One significant change has been the decision of Radio Netherlands to alter the time of their English programming directed to audiences in the Pacific. Previously they were on between 0730 and 0925 UTC. Now they will be combining the Bonaire and Russian relays to broadcast from 0930 and 1125 UTC, but no frequency information is available to me at the moment.

I do think, however, that they will keep to their usual channels with the Russian relays possibly being on either the 41 or 49 metre band. It seems very strange, as listeners in New Zealand will be tuning in from 2230 to 0025 NZ Summer time while listeners elsewhere in the Pacific will be sleeping.

Radio Saint-Helena

Radio Saint-Helena in the South Atlantic was scheduled to air their irregular semi-annual broadcast on 24 October. As I am writing this column before their scheduled broadcast, I cannot comment. However, I will let you know how it turned out.

In previous years I have found it extremely difficult to copy their signals. 11092.5 kHz

Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator
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Some clarification of Primary and Secondary intrusions seem to be in order.

Primary intruders are those who are permanently in the Amateur bands, eg 14126.5, 3 kHz, three channel, 144 baud, 235 Hz shift, and the like.

Secondary intruders are those who appear regularly in the Amateur band, but are not apparent on a daily basis.

By this newer method of observations, the system concentrates on fewer intruders, resulting in a more positive identification. It is far easier to check on a smaller number of frequencies.

This method is being evaluated by Ron Roden, Co-ordinator of Region 1 with a view

to possible implementation. All Region 3 Co-ordinators are being encouraged to try this approach.

It seems that the WIA has another "first". From what I can gather, no other country issues Certificates for observers in the Monitoring System. In Australia, observers have been presented with a "Certificate of Merit". The first issue was in 1985 to Col VK4AKX.

Initially, only one certificate was issued to any Amateur or Short Wave Listener who regularly and consistently supplied reports to the Intruder Watch Service

In 1992 we decided to award the certificate yearly on the same basis. Unfortunately, only four were issued in that year. It seems that the supply ran out. I am currently awaiting a reply from our organisation as to the

possibility of continuing this award.

I appreciate that observers spend much time on listening, and rewards are few. This, I suspect, is the main objection in recruiting Co-ordinators and voluntary observers.

However, I fail to understand the apathy of so many amateurs, who refuse to assist in combating the constant erosion of our frequency bands.

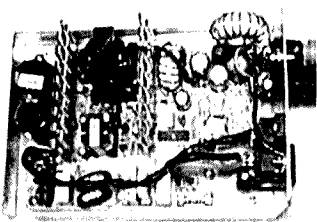
In conclusion, my time as Federal Intruder Watch Co-ordinator is drawing to a close. I aim to retire when my 20 year time slot arrives, which will be before the next Conference. This should give sufficient time to find my successor.

Any takers? It will also bring up my 43 years with an Amateur Licence.

Please note my new packet address of VK4KAL@VK4JEM-1.

Intruder Watch Summary for September

FREQ	UTC	EMM	DETAILS
3.560	1102	A3E	R Korea, ID, M&F announcers
7.039.5	1010>	A1A	SLBCN "F" Ch marker, CIS
7.100	0600	N0N	UiCAR. I need an ident if possible
14.126.5	daily	F7B	UiMUX, 235 Hz, 144 bd, 3 ch M/plex 930 Hz offset to neighbouring channel
14.211.5	0600	F1B	UiVFT, 850 Hz, 100 bd.
14.240	0550>	mny	N0N, F1B, R7B, 3 kHz wide
28.650	0030>	A3E	R Habana [?] H3 9550??



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You are looking at a photograph inspired by sheer genius. It's the insides of a 20amp power supply you may be able to build for as little as \$20, or perhaps even less. How? Simple. It started life as the power supply for an IBM-compatible personal computer. When the computer outlived its usefulness, its owner put it to very good use. Yours to build!

November's R&C should keep you reading until Christmas — but it won't have to, of course! Get into these...

- 2000 Olympic Games to "borrow" part of 70cm. The official ACA statement with WIA's comments.
- History of the hand-held. We turn back the clock to review old No. One — 58 years old and still goes!
- Review: Ranger RCI-2950 all-mode transceiver. The Sunspots are back — so is the DX! Try this out...
- Construction stories: build a simple six metre converter or a neat 20A switch-mode power supply.
- Retro review: The Barlow Wadley shortwave receiver. Boy, did this gadget set the tongues wagging!
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ARDF Amateur Radio Direction Finding

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ARDF appears to be alive and well with the following International events scheduled. Some notes are used to explain points of interest, dates, etc. For those who are unaware, the International Amateur Radio Union (IARU), is divided into three Regions with Region 1 covering Europe and Africa, Region 2 covering North and South America, and Region 3 covering Asia and Oceania. So, this puts us, in Australia, in Region 3.

Year	Event	Country	Host	Notes
1998	IARU R1 ARDF Championship	Hungary	?	1
1999	IARU R1 ARDF Championship	Croatia	HRS	
1999	IARU R3 ARDF Championship	Korea	KARL	2
1999	IARU R2 / FRG-99	USA	ARRL/FARS	3
2000	IARU World Championship	?		
2000	IARU R1 ARDF Championship	France	REF	

1. This event was held in early September and is interesting as the recently formed ARDF USA team will compete as visitors. The location of the year 2000 World event will also be decided in Hungary. My understanding is that it will definitely be held in Region 3. Australia has been suggested as it would allow the international competitors travelling long distances to combine their travel with the Olympics. Hopefully, there will be some news available for the next column.

2. Some Australians are expected to travel to Korea and compete in this event. Dates and schedule of events have recently been announced. It commences with a referees training course on 19 and 20 June in Seoul. Registration is on the 21st, the 2 metre competition on the 22nd, a day off (good for sightseeing, etc) on the 23rd, and the 80 metre competition on the 24th.

3. This is the Friendship Radio Sports Games (FRG-99) combined with the inaugural Region 2 IARU event to be held in Portland, Oregon. The FRG-99 event is unique as it provides a combination of foxhunting, HF operating and CW competitions (see October 1997 ARDF column for more details).

However, as the name implies, friendship and goodwill are the prime consideration.

It would be nice to see some Australian participation in this event.

Dates announced cover the time frame of 6 to 14 August.

ARDF and Kids

Previously, in this column, reference has been made to getting Scouts and Guides involved in ARDF. The Chinese introduce ARDF in some schools. I am now aware of families in two parts of Australia who have introduced ARDF type activities to their kids. One is in Canberra, the other in the Newcastle area. The latter, as I understand, is a group of three families with the OMs being Amateur friends. Maybe a good way to keep the kids amused while the OMs play at other aspects of Amateur Radio!

Discontinued Components

Philips, in their wisdom, have discontinued the BF-981 dual gate MOSFET. This device has been quite popular as an RF amplifier for Amateur VHF receivers, including ARDF type receivers.

I have spent considerable time searching for a suitable replacement and the only device reasonably available is a surface mount device (SMD). So, whether we like it or not, manufacturers will force those Amateurs who like to do some construction work, into having to handle these small SMDs.

Motorola is currently phasing out their MC3362 FM receiver chip. This chip has also been popular in ARDF receivers. The replacement chip, amongst other things, calls for a complete circuit board revision as its pin-outs are completely different from the MC3362.

I have recently had the opportunity to design and build a couple of VHF direction finding receivers using my chosen replacement components. This has provided an opportunity to gain some experience with those components. The receivers are crystal locked onto various VHF marine frequencies. There is an apparent requirement to be able to DF "locked on" transmitters, particularly on the distress and repeater input frequencies. Incidentally, a fairly large quantity of surface mount components has been used in these receivers.

Speaking of using SMDs, I have been using them for some time and now find them reasonably easy to handle. I initially went for the largest (common) size 1206 resistors and capacitors. Recently, I have changed (for a lot of applications) to the next smaller size, 0805. It's amazing, really, that the 1206 size components now appear "large" when I use them. By the way, these component sizes are in inches, the 1206 size being 0.12 of an inch long by 0.06 of an inch wide, which translates to 3.2 by 1.6 mm.

More About the Hungarian Event

This event, which I made reference to at the commencement of this column, is over and I have some reports from the US team manager. The main thing is that he was quite pleased with the team's results.

This is particularly important as this was their first exposure to an International event. He attended all the "working group" meetings and had these comments:

(a) Interestingly, the absence of Australia, New Zealand and Canada was noted! (I think the cost of competing in these International Events is, and will be in the future, an important factor regarding participation. The US team paid their own fares and the ARRL paid their entrance fees).

(b) There is a move to standardise the ARDF rules for the three IARU Regions.

(c) What I think to be the most significant is the outcome of the year 2000 world event. I gave already given some background regarding this event being offered to Australia. Apparently, our WIA was in late communication with the Region 1 Working Group and declined to organise the event for Australia. Reasons given were that no Club or Group was willing, they would be supporting VK2 with Olympic activities, their need to organise the IARU meeting in Australia that same year and that ARDF was not yet fully established in Australia.

China has agreed to host this event in the year 2000.

Also More About the Korean Event

Grant Willis VK5ZWI, the WIA IARU Co-ordinator, is acting as a temporary focal point for those interested in attending this event. The "temporary" is because Grant is filling in while our WIA fills the vacant position of ARDF Co-ordinator in Australia. Grants e-mail address is: gwillis@dove.net.au. There is a Web page describing the Korean event at <http://210.100.211.57/ardf/index.htm>.

Contributions Wanted

When I started this column, I tried to stress that it was to help promote ARDF/fox hunting in Australia and that contributions would be needed to provide sufficient material and interest to keep it going.

The column has been running for a year now and I am finding next to no spontaneous input. Please, if you are, or have been, involved in any interesting direction finding activities, write a few lines or a few paragraphs on your experiences. Possibilities could be comments on your Group's activities or proposed activity, involvement with JOTA, a technical description of some equipment, etc. ar

Repeater Link

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10 kHz Spacing

The Illawarra Amateur Radio Club newsletter carried an article from Robert VK2MT on changing the 2 metre band plan for voice repeaters. In short, rather than the current 25 kHz spacing, go to 10 kHz spacing. The reasons for this were to allow for increased numbers of repeaters in those areas that are overcrowded and/or suffering from pager interference, and more options and more solutions to existing and future problems. The 10 kHz change could offer considerable benefits. Before you throw your hands up in disbelief read on.

The 10 kHz spacing idea is not as disruptive as you may at first think and is technically feasible. Many years ago the USA went through a similar process of going from 30 kHz spacing to 15 kHz spacing. Much debate was held and when the idea was tried it worked. However, 10 kHz spacing is just too close. Two repeaters located in the same area 10 kHz apart would interfere with one another. But that is not the intention. Two repeaters only 10 kHz apart would be many hundreds of kilometres apart.

Why 10 kHz?

Unlike the USA with their 30 kHz spacing, we use 25 kHz spacing and it is not practical to halve this figure to 12.5 kHz, as most modern radios don't offer 12.5 kHz stepping. 10 kHz spacing is not a problem from the users' radio point of view as 5 kHz and 10 kHz stepping is normal.

How Is It To Work?

It is simple enough to allocate extra channels at 10 kHz intervals and allow repeater clubs to choose from a wider selection of channels. There is a problem, however, with existing repeaters on frequencies ending in 025 and 075.

The channels under the 10 kHz idea end in 000, 010, 020, 030, 040, 050, 060, 070, 080, 090. Note the channels ending in 100, 150, etc don't have a problem. What is required of existing repeaters operating on the 025 and

075 frequencies is a need to change frequency. This is not as difficult as you may think. A repeater operating on, say, 146.025 only has to shift 5 kHz up or down.

Shifting

The need to shift frequency for some repeaters is an important point worth expanding on. Most repeaters under the 10 kHz proposal would not have to change frequency. All repeaters ending in 00 or 50 conform to the band plan. Only repeaters ending in 25 or 75 need to change up or down 5 kHz.

This 5 kHz shift is easily achieved by frequency tuning the Rx and Tx crystals in the repeater. It would be unusual not to be able to move a repeater's Rx and Tx up or down 5 kHz. If there is a problem going one way then the other direction could be tried. Once tested as to which way is the easiest, the new repeater channel is either 5 kHz up or down and the licence is changed. More on the licence change later.

There would be no need to tune the duplexer on the repeater as a 5 kHz shift is well within the design notch of duplexers. In

If you have a comment, or would like your club or WIA Division to comment, please encourage them to do so.

short, to change a repeater that is on a 025 or 075 frequency is a simple 5 kHz frequency shift up or down. The 025 and 075 repeaters now conform to the 10 kHz band plan.

The User

What about the user who has a crystal locked transceiver on one or more of the 025 and 075 repeater frequencies? As described above, a slight retune of the Rx and Tx crystal frequencies is all that is required. Remember, it is only 5 kHz and most, if not all, radios can be frequency tuned this far.

In Use

The reason for this change in band plan is to allow greater frequency usage (more channels) and, most important, greater flexibility for the repeater club. With so many channels to choose from, interference and pager problems can be tackled with more options.

Frequency co-ordination becomes even more important, in that repeaters are not allocated 10 kHz spacing if they are within propagation distances. But more options means greater flexibility to make sure this

does not happen. If there is a mistake made and two repeaters within propagation distance end up 10 kHz apart, then one or both only have to shift 10 kHz up or down to resolve the problem. Even a 10 kHz shift should be within the range of most crystals.

Licensing

Licensing could be a cost to the amateur repeater that has to move up or down 5 kHz, as it is a change in the licence conditions. I don't know how the ACA would view this one but it may well attract a \$30 fee (Is it \$30? With so many changes over the last few years I forget what is current).

Comment

I'm in favour of the idea but what is now required is comment from repeaters users on the idea. What do you think, particularly those Repeater Managers who operate systems on the 025 or 075 frequencies?

For all other repeaters there is no change, so it has little immediate effect. In the long term it could result in too many voice repeaters too close together, unless good frequency co-ordination is maintained.

If you have a comment, or would like your club or WIA Division to comment, please encourage them to do so. I'm willing to receive your thoughts and I can co-ordinate them for FTAC to consider. I have run the idea past John Martin (FTAC) and he expressed interest to hear from you.

By the way, without looking it up, who is your Divisional Technical Advisory Committee person (TAC)? If you don't know who this person is, find out and run the idea past him or her. Seek a response from this person or persons. It is their job that they have undertaken as a volunteer, so find out what their thoughts are.

Thanks to Robert McKnight VK2MT who thought up the idea. Good one, Robert!

Accurate?

Just how accurate are the repeater lists (and broadcast lists) you see in the WIA Call Book and other publications? Over the past couple of years I have put some time into correcting and bringing up-to-date this list for VK6. The number of errors, old information, missing information and just plain wrong listing, is amazing.

One interesting error in *Amateur Radio* magazine under Broadcast Frequencies was a VK6 WIA Broadcast on 29.680 MHz. This entry had been in the magazine for many years. There had never been a broadcast on this frequency, ever! Over the last year or so, 29.120 MHz FM has carried the VK6 news. How do these errors occur and how do they go on so long without someone noticing or commenting? ➔

One type of error that I found common was repeaters listed that had never been. A person or club intended to put a repeater on air, and in some instances even obtained a licence, but the repeater never made it. If there was a licence it lapsed and many years down the track this repeater, that never was, continued to be listed as either operational or proposed.

I found that about a third of the repeater listings in VK6 were incorrect in some way or another. Mostly these repeaters had never been or had ceased operation, or were on air little of the time. Some repeaters go off air for a year or two and then re-appear for a few months only to go off air again. What is the point of having listed repeaters that are not on air? This list is meant to be for users to know what repeaters are operational.

I wonder how accurate your State's repeater lists are? A comment from John Martin (FTAC) is that some Divisions have not responded with information on their repeaters in several years. Either there are no changes or someone is not doing the job of keeping the list up to date. There is a third possibility and that is no one knows whose job it is to keep the list up to date and make it available to publications, like the WIA Call Book.

Find out from your Division whose job it is to keep this information up to date and available.

Climbing Towers

Our repeater club in VK6 has experienced increasing difficulty in obtaining unrestricted access to some of its sites. Site owners are becoming more aware of safety issues, and the possibility of legal action being taken against them in the event of an accident.

This problem has been ongoing for over two years now and our repeater club (WARG) has been in constant contact with the appropriate authorities. It has been a very slow process with numerous letters and phone calls to ask what is happening. The most common response is "sorry your letter was inadvertently misplaced but we are attending to it as a matter of urgency". At long last a response has been received in writing.

WorkSafe WA Reply

WorkSafe Western Australia has sought a legal opinion on the application of the Occupational Safety and Health Act 1984 to climbing and maintenance activities undertaken by unpaid volunteers on WARG owned masts and towers located on private land usually owned by a farmer

The legal opinion the department has received confirms our view that an operator or owner of a farm does not incur responsibilities under either the Occupational Safety and Health Act or Regulations to "volunteers" when they are actually engaged in the

activities of climbing or maintaining masts or towers erected on farmer's land.

The owner or operator of the farm does not have any control over the masts or towers that are owned and maintained by WARG

However, an owner or operator of a farm may incur responsibilities under section 21 of the Occupational Safety and Health Act to WARG volunteers where the volunteers may be affected by the farm work, for example when going to or from the mast/towers.

Section 21 of the Act requires employers and self-employed persons to, as far as practicable ensure work in which he or any of his employees is engaged does not harm a person who is not their employee. The responsibility of the farm owner or operator towards WARG volunteers is the same as that towards any person who may be affected by the farm work."

All Clear?

The letter says WARG can climb their towers on land owned by others without causing the owner a problem. The owner is not liable if an injury happens during the course of tower work. However, access to the site may be a problem due to the nature of the activity on the land.

I hope this last statement does not cause further delays as the owner can still be concerned due to access to the repeater site. However, at least we have a response from WorkSafe WA and we await reaction from the site owners. It is important to point out site owners are not being difficult but merely following the trend of keeping lawyers and Government departments working hard.

Computers UGH!

My articles about the joys and frustrations of computers received considerable comment with stories of similar anguish. Here are a couple of interesting computer messages that greet the user from time to time.

"Keyboard not working hit F1"

"Printer unable to print as printer is busy"

The first one speaks for itself and the second was a response from my computer when I tried to print a paper. My question to the computer was "busy doing what?" It was just sitting there doing nothing as far as I could determine. If in doubt, re-boot and the computer was no longer busy. Overall, is more time spent waiting for Windows to reload than the time computers save?

My latest computer problem is with my Epson 500 colour printer. It prints but every now and then says "printer off line" and misses chunks of what it is printing. So on it goes, you sort one problem out only to be faced with another. Must get around to Amateur Radio one day.

ar

AMSAT Australia

Bill Magnusson VK3JT

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E-mail: vk3jt@amsat.org

AMSAT National Co-ordinator

Graham Ratcliff VK5AGR

E-mail: vk5agr@amsat.org

AMSAT Australia Net

The AMSAT Australia net is held on 80 and 40 metres LSB each Sunday evening. During daylight saving time in South Australia the net is on 7068 kHz +/- QRM with an official start time of 1000 UTC (with early check-ins at 0945 UTC). During the rest of the year, the net is on 3685 kHz +/- QRM with an official start time of 0900 UTC (with early check-ins at 0845 UTC).

AMSAT Australia Newsletter and Software Service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand, and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia

GPO Box 2141

Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, ftp.amsat.org and following the sub-directories to "KEPS".

Spectacular Images from TMSAT

Some of the best images ever available to amateurs via an amateur radio satellite have been posted recently on the Internet by Chris Jackson.

The final multi-spectral pictures have been produced by integrating separate images taken at differing wavelengths. This method is one that commercial Earth-imaging satellites like LANDSAT use to show up different vegetation types, or built-up populated areas, in their images. The resolution of the images is surprisingly good, particularly as they are JPEG compressed

down from 3.5 megabytes to about 500 kilobytes for transmission via the Internet.

Whilst JPEG format is wonderful for reducing file size in the least intrusive way, it nevertheless degrades the final image quality. Having seen the results as uploaded to the Surrey Website, one can only wonder at the quality of the originals. It is possible to see detail as fine as 100 metres or so and in one image of Seattle, Washington the two Mercer Island bridges are clearly visible. It certainly appears that the original images would rival commercial satellites for picture clarity.

The first pictures were produced by combining images taken in the red, green and near-infra-red parts of the spectrum. Covering an area of 100 x 100 km on the ground they result in pictures having a resolution of better than 100 metres per pixel.

The images have an overall reddish appearance. Red areas indicate healthy vegetation as chlorophyll strongly reflects near-infra-red light. Urban areas generally show up blue-grey. The different colours of fields provides an indication of the state of vegetation, bare soil, marsh, young or mature vegetation, etc.

I have been subscribing for some years to the European Space Agency publications, *Earth Observation Quarterly* and *Record of Images*. They contain some pretty spectacular images from commercial earth-imaging satellites. However, the first few pictures I downloaded from the TMSAT internet site were no disappointment, even judged against the commercial images.

They are a great incentive to tool up for 34,400 baud download capability. This speed should make it easy to download the original image files which can be over 3.5 megabytes in length. I urge you to look at these pictures at: <http://www.ee.surrey.ac.uk/EE/CSER/UOSAT/amateur/tmsat/index.html>.

I would also strongly urge users to consider making their stations ready for the 34,400 baud downlinks on the TMSAT spacecraft. We are very privileged as amateurs to have the opportunity to take part in these experiments. Detailed instructions of how to make the necessary changes are available from the Surrey Web site and, although they are a little daunting at present, I'm assured that more realistic ways of achieving good 34,400 baud downlink are under development. Watch this space for details as they come to hand or, for those with Internet access, keep abreast of the goings-on at the Surrey Web site.

Standby for Historic Broadcast

If the planned "Return to Space" for pioneer astronaut John Glenn becomes a reality, another aspect of the flight will also be of historical importance.

The ARRL reported recently that "Renowned former TV newsmen Walter Cronkite KB2GSD, will be back in the anchor chair for the historic shuttle flight that carries John Glenn back into space this fall. Cronkite, who's 81 and retired from his long-held anchor position at CBS in 1981, will report on Glenn's return to space for CNN".

I remember seeing film clips (at the pictures on a 'Sat'day') of Walter reading the news in the days before TV in Australia. He was well known and respected as a reporter in the early days of radio and, later, TV. I never had the pleasure of a contact with Walter on-air but I understand many Australian amateurs did.

Sad News

Peter Guelzow DB2OS sadly reported that Leonid Labutin UA3CR died of a heart attack on 10 September 1998 at his summer residence near Moscow. Peter stated that Leo was a very well known and respected person in the Russian amateur satellite and space scene for a long while, and was very active until his death.

He was at the South Pole after the launch of RS5 through RS8 for testing store and forward techniques from such remote locations. He also assisted the Northern Transpolar Ski Trek Expedition between the USSR and Canada in 1989 that included communications via Amateur Satellites (many schools in Australia followed this expedition via the 'digitalker' on UoSat-2).

Leo was directly involved in various RS satellite projects, and helped to negotiate the delivery of amateur radio equipment to the MIR space station. Leo operated a Satellite Gateway Station via UO-22 and was responsible for much of the packet radio message flow into and out of the Moscow area of Russia. Leo will be missed by the entire amateur satellite community. For many of us, Leo's name was synonymous with satellite operations in Russia over many years.

Latest Announcement Re MIR Life Span

Miles Mann WF1F reports that the current plan is for the Russian Space Station MIR to be occupied until approximately June/July 1999. After this date, the crew will leave MIR and return to earth.

A remotely controlled booster will dock with the MIR station and then fly MIR into the Pacific ocean a few months later. If the occupation of the International Space Station is delayed, Energia reserves the right to extend the duration of the manned MIR missions.

Sputnik RS-17 No 2

Many readers will remember RS-17, the SPUTNIK replica, last December. It was launched from MIR to commemorate the

Table 1	
RS-12	
Uplink:	145.910 to 145.950 MHz CW/SSB
Uplink:	21.210 to 21.250 MHz CW/SSB
Downlink:	29.410 to 29.450 MHz CW/SSB
Downlink:	145.910 to 145.950 MHz CW/SSB
Beacon:	29.408 MHz
Robot:	Uplink 21.129 MHz
	Downlink 29.454 MHz
Mode:	Last reported in mode T.
RS-13	
Uplink:	21.260 MHz to 21.300 MHz CW/SSB
Uplink:	145.960 MHz to 146.000 MHz CW/SSB
Downlink:	29.460 MHz to 29.500 MHz CW/SSB
Downlink:	145.960 to 146.000 MHz CW/SSB
Beacon:	29.504 MHz
Robot:	Uplink 21.140 MHz
	Downlink 29.458 MHz
Mode:	Last reported in mode K.

launch of the original SPUTNIK. RS-17 beeped away for over six weeks and was heard by thousands of people around the world. An identical replica was also delivered to MIR last year and is still on board. Later this year it is planned to install new electronics and battery. It will then be launched from MIR. This will be quite an event as it will be among the very last amateur radio activities to take place before MIR is de-commissioned.

The State of RS-12/13

This satellite has been going through a period of mode changing which has left a lot of people wondering. RS-12/13 and FUJI are the only LEO satellites left which support reasonably reliable analogue (voice) operation. They are quite important for those satellite users who choose this mode for their day to day operations. To that end, the latest information on RS-12/13 from the AMSAT News Service is shown in Table 1.

The RS-12 transponder, in particular, has seen many recent changes in operation during the past weeks. Modes K, T, KT, and simultaneous RS-13 operation, have all been reported by a number of stations. The RS-12 beacon is now transmitting the word 'test' in slow CW after the usual fast CW telemetry.

No official word from the satellite controllers has been received. You will need to monitor each of the frequencies carefully to determine the transponder in operation and which mode is turned on. RS-12/13 command is now in the hands of Alex Papkov, in Kaluga City, Russia.

Meanwhile, back at the ranch, things are looking up for analogue satellite operators. It was announced recently that SEDSAT-1 was on track for launch in October or November. More news on this as it comes to hand.

VHF/UHF

An Expanding World

Eric Jamieson VK5LP

PO Box 169, Meningie SA 5284

Fax: 08 8575 1777

Packet: VK5LP@VK5WI.#ADL.SA.AUS.OC

E-mail: vk5lp@ozemail.com.au

All times are UTC

Beacons

Colin VK5DK sends a short note to let all know that the VK5RSE two metre beacon on 144.550 MHz is now using 4 x 4 element Yagis connected via a 4-way power divider.

One Yagi is beamed west, one beamed towards Adelaide, one beamed north east (VK2/VK4) and one beamed east. The antennas were changed over on 5 September.

Colin would be interested in any reports of how the beacon's signal compares to previously when a turnstile was used as the antenna. His e-mail address is vk5dk@anson.com.au.

The V73SIX beacon has changed frequency to 50.014 MHz.

The Christchurch VHF DX Group advises of a new beacon ZL3SIX on 28.228 MHz, power 10 watts, antenna a half-wave vertical. The trustees, Ross ZL3ADT and Mike ZL3TIC, will be interested in any reports. E-mail to Ross at zl3adt@xtra.co.nz and/or Mike at Mycom@xtra.co.nz.

Also, ZL3SIX on 50.040 MHz operates with a power of 70 watts, and a two phased dipoles antenna. Reports are also sought.

From the JA six metre WWW cluster, XE1KK/b on 50.110 was heard in A35 at 0240 on 6/10/98 (this is probably a keyer using 50.110).

According to Ted Collins G4UPS, the South African beacon ZS6TWP on 50.044 MHz peaked to 579 between 1854 and 1902 on 15/9. Its full locator is KG46rd.

TV Off-sets

Mike ZL3TIC reports he receives e-mails asking for details of 45/46 and 55 MHz TV and off-sets in ZL, VK and the Pacific regions. The address is <http://www.radioinfo.co.nz/6mfreq.htm>.

He says band conditions are improving on six metres.

Also, remember the beacon ZL3SIX frequency is 50.040 MHz, location 20 km south of Christchurch, power 70 watts.

Six Metres

Scott VK4JSR expects to operate from Lord Howe Island from 18/11 to 22/11 inclusive. Equipment is a Yaesu FT-847, running 100 watts to a five element Yagi on 50 MHz, and a dipole on 28.885 MHz. Currently awaiting call sign allocation.

David Clegg VK5AMK reports that on 1/10 he worked from 0431 to 0438 JK8FGX, 0437 JA8QX and JA8NAE, all around S5. Using a Kenwood 680S, David said the highest frequency commercial signal heard was voice on 34.875. Unfortunately, there is a gap between 35 and 45 MHz in the 680S so there may have been signals higher up.

Neville Mattick VK2QF, in a brief message, says he is still on six metres from QF47, focussing mainly on F2 and TEP, usually CW. He suggests you check his URL for all current six metre DX activity from his location: <http://winsoft.net.au/~vk2qf>.

Ray VK4BLK (ex-VK3LK) writes that no six metre DX came his way during May to August. Since then, as follows: 4/9: 0520 JAS; 12/9: 0400-1030 JAS; 13/9: 0455-0548 JAS; 14/9: 0810-1024 JAS; 20/9: 0440-1046 JAS; 25/9: 0820 KH6HME/b, KH6HI/b, 0834 KH7L 5x5, 0850-1146 JAS, 2300-2323 JAS; 26/9: 0918-0927 JAS; 27/9: 0351-0450 JAS; 29/9: 0930-1037 JAS; 30/9: 0640 KH6HI/b, KH6HME/b, 0656 WH6O 5x4, 0700 KH7L 5x1, 0714 KH6SX 459, 0700-1200 JAS.

Ray now lives at Yeppoon, so is in a position to make the most of TEP openings. Interesting to note that JAs at times have only been via afternoon type TEP, others by evening TEP through to 1200, and some starting in the morning at 2300. Thanks Ray.

Alaska

Steve Gregory VK3OT/KL7SIX, e-mail steve_vk3ot@hotmail.com advises of visual auroral activity on 30/9 for the first time, much to the delight of all the family. NL7OW was in on 50.130 5x5 on AU b/s from BP54.

Ten metres was open from 2400 to 0400 and he contacted VK7IK/3, VK2BA, VK2QF, VK4BRG, and VK6HK who all expressed the wish and will to work KL7 on 6 metres.

"I am set up on 28.885 with 500 watts and an elevated ground plane and by being on this frequency daily I am somehow coaxing contacts between KL7 and VK6 at 15000 km on what was hitherto a dead band. So, next stop 50 MHz in late October.

"What started a week ago as weak signals from VK2RSY/b on 28.262 has rapidly accelerated to good paths as far as VK6 on 28.885 MHz now we are past the equinox.

"On 1/10 the band opened on 28 MHz at 2330 to VK7IK/3, VK4APG, VK2QF, then at 0200 VK2RSY/b 28.262 539, VK5WI/b 28.260 539, followed by intermittent receipt-

ion of VK6RWA/b 28.264 559 on top of the JA5 beacon 28.263 339. David VK2BA announced a six metre path to JA8 existed.

"Don VK6HK (15,000 km) on 28.885 was marginal around 0300 but improved at 0400 to 5x7 with rapid QSB and phase distortion, classic indicators of decaying F2. This is the first VK6 to KL7 in over a decade on ten metres and shows the band is improving rapidly. All using a rotary dipole at this end.

"NL7OW was in on AU backscatter at 0700 and a visual fast moving green aurora was noticed above my house at an angle of 45 degrees at 10 pm local time.

"As to how to work KL7 from VK, I suspect given the beam heading is 015 degrees that you need a good JA8 opening and should check for both 49.640 DARN radar signals and 55.2406 TV from KTUU on Mount Susitna. The TV will sound raspy with a 60 Hz frame frequency of the US NTSC system just like KVZK Pago Pago on 55.2498.

"I suspect the window will be from 2330 to around 0330 (sunset), and that November and December are the prime months.

"Active stations are Steve KL7FZ who runs 400 watts to a 7 element Yagi in Wasilla BP51, Dan KL7Y an itinerant operator also in Wasilla, Tom NL7OW a blind operator from Kenai or Homer Alaska, in BP52 250 miles south of Anchorage, and Al Noe KL7NO in BP54 at Fairbanks some 300 miles further north.

"If you hear the radar call 907 373 5435 or 907 376 OHMS (yes OHMS).

"Not much else to report. Don't forget that most USA and certainly all KL7s use 50.125 for calling and occasionally monitor 50.110. Openings are expected from US October/November so watch the pagers and other indications and expect to hear US soon."

Seonet Convention

Another reminder that the Seonet Convention in Singapore will activate 9V8SEA, which will include six metres, from 0200 on 13/11 to 0700 on 15/11. Six metres will be on 50.085 CW or 50.115 SSB. Full information was given in these notes last month.

Cocos-Keeling (VK9C) and Christmas Islands (VK9X)

Charlie W0YG, currently in South Africa, and George W8UVZ will operate from Christmas and Cocos Islands from 6 - 20 February 1999. They will spend a week at each location, primarily on the low bands, but they will attempt some six metre activity.

Tajikistan

Nodir EY8MM in MM48 is now active on six metres with a TS-570S at 100 watts. Antenna, four element Quad, ready in October. All Extra Class stations in EY are

allowed to use 50 MHz. If you need a copy of the licence Nodir can send it to you. Tel: +7(3772)21-4706 Home. E-mail: EY8MM@SOVAM.COM. (Spelt Tadzkistan in the atlas, the country joins the northern border of Afghanistan, so it may be an interesting distance from Australia during F2 openings. VK5LP)

Leonids Meteor Shower, November 1998

(Excerpts from a letter from COMNAV-SPACECOM, Dahlgren, VA, published in the *50 MHz DX Bulletin*).

Six metre operators should be aware of the increased possibilities of wide-spread Sporadic-E clouds to the deposition of meteor "dust" in the E-region. Said dust consists largely of atoms that are easily ionised and when ionised have a relatively long lifetime (compared to the natural constituents).

This message is to heighten your awareness and discuss preparations for the November 1998 and 1999 Leonid meteor storms.

Each November, the earth crosses the path of the comet Temple-Tuttle. As the earth passes through the debris trail from this comet, the Leonid meteor shower occurs. Typically this results in about 15 meteors per hour entering the earth's atmosphere. But, on certain occasions the meteor activity can reach "storm" levels, with thousands of meteors observed per hour.

The comet's orbital period is approximately 33 years. This year, and next, will be the most intense meteor storms of the 33 year cycle. The peak period of the meteor activity lasts for a span of two to six hours, and can be fairly accurately estimated. This year's peak is expected on 17 November at approximately 1900.

From a period of 1100 on 17/11 until 0100 on 18/11/1998 (maximum +/- six hours), all users of satellite assets should monitor their system very carefully. Naval space command is currently planning to add manning at the satellite operations centres. Nobody knows what can occur to the about 500 satellites now in orbit.

Europe

Ted Collins G4UPS reported September as excellent for 28 MHz, with obvious F2 propagation to VK, JA and other parts of the world. He said 28.885 - the liaison frequency - has been quite busy with VK6RO, PY5CC and others using it.

Geoff GJ4ICD sent information from the December notes of HRT. He says: "The DX continues! Following on from last month's reports a very large Es opening occurred on the 15th August both on 50 MHz, 70 MHz and 144 MHz. Six metres opened very early throughout Europe, almost every country was

worked/heard in the UK, this was by far the biggest opening this year, and yet so late in the season!

"Martin G3VOF (Essex) reported working UA9SIX/LO91 at 1118 which was a new country! PE1PZS also worked the UA9 a little later, as did G3WOS, G3FPQ, G3HBR, GJ4ICD, G4CCZ, F6IFR and many more, the distance was around 4,000 km which indicates double hop Es.

"At 1650 LU3EJW was into Europe big time on "6", several Gs were worked including G3WZT, G4RQI, G6LJJ and Clive Penna GM3POI. His best DX was OH2BC at over 12,800 km! Eight countries were worked in Europe. A little later ZD8VHF/b (50.0325 MHz) was copied by Al Harvey GU7DHI and GJ4ICD.

"On the 16th August Dave N5JHV, in DM62 (New Mexico) had a 50 MHz Es pipeline into the UK at 1745. Dave worked several "G" stations during the opening at over 8,000 km; at 1820 GD4XTT had an Es opening on 144 MHz to OK, and Jon OY9JD (Faroe Islands) managed to work 7Q7RM in Malawi on 50 MHz for a first between those two countries.

"Whilst everybody was watching the BBC 9 pm news on the 17th Larry, TZ6VV (Mali) had a 30 minute 50 MHz opening into Europe via Es! Larry worked 35 grid squares, 11 countries, and completed 60 QSOs with many UK stations such as Mike G3OIL, Trevor G3ZYY, ONs, PA0s and GWs.

"A small Es opening on the 23rd provided a "top end link" (F2 to Spain then Es to the UK) with Peter PY5CC/GG54 in Brazil, he managed to work 35 stations in ON, DL, SP, F, PA, G, GW and GM in the opening which started at 2000, best DX was GM3POI.

"Early on the 28th August at 0600 50 MHz beacons ZS6DN and ZS6TWB were copied in Europe, this opening is most interesting as on 28th August 1988 the first ZS6 to G/GJ QSO took place on the band, it seems quite incredible that a repeat some 10 years later has occurred exactly to the day; later at 1810 ZS6AXT was 539 into Jersey and stations in Argentina were worked in France.

"Ivo ZS6AXT who is located in Pretoria worked I, EH1, IS0, 4Z, F, EH3, EH5, SV, S5, YU on the 29th and the 30th produced TZ6VV into Europe, this was a very wide-spread Es event with Larry working over 100 stations, later in the day Argentina (LU) was into F/GJ.

"Into September now, the 1st recorded a SFI (Solar Flux Index) of a massive 179, this was the highest recorded so far in Cycle 23, but beware! Solar Flux does not always indicate good conditions on the VHF bands, by this I refer to F2/TEP openings on 50/70/144 MHz.

"During last cycle some very intense

observations and data were recorded in respect to openings versus solar parameters, on many occasions openings transpired during high Geomagnetic/Solar activity periods, on other occasions no openings transpired when the solar flux levels were at their peak, so don't get caught out, watch the trends of 28 MHz, also 14.345 MHz and 28.885 MHz where the dedicated group of VHFers will be passing information around the world."

Geoff Brown's new address is Rockdene, La Rue du Rondin, St Mary, Jersey, CI or via e-mail to equinox@itl.net. The Internet 50 MHz/70 MHz/144 MHz DX News is at <http://user.itl.net/~equinox/50dx.html>.

Two Metre SSB Net

Barry Miller VK3BTM reports that Len VK3BMY, in Numurkah (about 32 km north of Shepparton), has been attempting to get his fellow local amateurs interested and operational on 2 m SSB. To help in this, Len has been running a 2 m SSB net at 0930 (1930 EST) on 144.150 every Wednesday night.

However, please note the following change of time. Len VK3BMY advises that the Shepparton Group 2 m SSB net has shifted to a start time of 1030 (2030 EST). Due to the increase in participants, the previous time-slot of 1930-2000 EST proved too short. Now, by starting after the Shepparton Group FM net, it will allow the SSB net to run as long as necessary.

Len would be very happy for anyone to come up on the net to help demonstrate to his local radio group members the fun that can be had with SSB. From this, hopefully some activity on 70 cm or above might eventually take place.

"If you're interested in joining in, but are having trouble hearing the net or being heard, send me a message on BMiller@vnpbtrm.telstra.com.au and I'll let Len know."

Microwaves

Neil Sandford VK2EI of Port Macquarie (ex VK6BHT of Geraldton) sent a fax with news on 24 GHz activities from his new location.

During a trip involving long distances around Australia, Wal VK6KZ found himself at the new location of Neil, and he "just happened" to be carrying 24 GHz equipment! For a considerable time, when Neil was at Geraldton, Wal from Perth had maintained contact with him on many occasions using various microwave bands, so it was not surprising that another contact should be attempted.

Neil wrote: "On 13 September, Wal VK6KZ/p2 at Sealy Lookout (310 m) just north of Coffs Harbour, made contact with Neil VK2EI/p at North Brother Lookout (490 m) on 24 GHz, a distance of 157.5 km. Initial

reports were 5x3 and 4x5 respectively, peaking to 5x4 for the remainder of the contact from 0535 to 0550. We intend to lodge a claim for the Australian record by extending our previous VK6 record of 147.3 km in January 1998.

"It is interesting to note that Wal travelled 11,501 km to make the contact - that must be some sort of record in itself! Calculations using the RSGB UWV Handbook Path Loss Programme indicates this probable line-of-sight path had observed results agreeing closely to predicted.

"The weather was fine and very hazy with high scattered cloud and a very light breeze. Temperature/humidity was measured at VK6KZ as 24C/93%RH and VK2EI 18C/57%RH which is far from ideal."

VK2EI has now retired to a new house on a prominent site at Port Macquarie and plans to be operational on 10 GHz from about next December, with 24 GHz and 5.7 GHz also.

Further to the above, Wal VK6KZ, now home, said that the equipment used was the same as that to set the previous record in Western Australia.

He also reported travelling 11501 km to make the contact and 5175 km to return home! He visited his son and family in the Kimberley regions of WA, and his daughter and her family in Melbourne on the way to Port Macquarie, but returned direct to home.

In forwarding a copy of a microwaves contest details in the US, David VK5KK adds wistfully: "We can only wish for this sort of activity on 10 GHz ... 36 stations within 400 km!"

Larry Filby K1LPS sent preliminary results of his 10 GHz activity on 19/20 September. QSOs: 84 callsigns: 36 stations with 3600 distance points: total points 13,396. Best DX: FN44IG to FN31FH, 377 km (234 miles) to K1UHF. Total claimed score: 16,996 (Preliminary).

System: SSB Electronics transverter modules. 3 dB NF, 180 mW out (for better results this needs to be increased), 24 inch dish with Chaparral prime focus feed. IF/Driver: Yaesu FT-290R. WBFM: 35 mW Gunn/ARR receiver board, 12 inch dish w/ waveguide feed.

IPS Daily Report

David VK5AMK davclegg@cobweb.com.au advises: "I get this e-mail every day by "subscribing" (no cost). I wonder if you get it or others may be interested in the service with 6 metres on the up." Details for one day are below as an example but contact David if you run into problems.

Subject: IPS Daily Solar and Geophysical Report - issued at 2330 02 October 98 by IPS Radio and Space Services from the Australian Forecast Centre.

The report covers Solar Summary, GOES satellite data, solar forecast, magnetic summary, flux, A and K indices, global HF propagation forecast, Australian Region ionospheric summary and forecast and so on.

IPS Radio and Space Services PO Box 1386 Haymarket NSW 1240 AUSTRALIA tel: +61 2 9213 8010 fax: +61 2 9210 9060 email: asfc@ips.gov.au . WWW: <http://www.ips.gov.au/asfc> . FTP: <ftp://ftp.ips.gov.au/users/asfc/> .

One Metre News

An e-mail from Ken Pincott VK3AFJ was in response to my recent writings (August *Amateur Radio*) on one metre activity.

Ken said: "I think I can claim to be one of the pioneers on this band, as Bert VK3AAF and I were active a couple of days after the *Radio and Hobbies* magazine published the article on the one metre mod-osc and super regen receiver. Within a week, I had my equipment installed in the car, and was operating mobile, back to Bert.

Solar Flux does not always indicate good conditions on the VHF bands. . .

"At one stage we held the distance record of 68 miles. I stayed with the mod-osc/super regen set-up, but Bert modified a disposals radar set.

"Since those days, I've had several changes of QTH and my old log books have never been unpacked, and I do not know just where to look for them. [What a pity! ... VK5LP]. I do recall that we stirred up a lot of activity around Melbourne, and by the end of the following year had over 60 stations active. Those were the days when amateur radio was fun, and I have some pleasant memories of those activities."

Ken - you must find that information - please! ... VK5LP.

Spring VHF/UHF Field Day

Last month I advised of the field day to be held on 14-15 November. Details of the Spring VHF/UHF Field Day are included on page 36 of October *Amateur Radio* and relate fairly closely to those of the January field day.

Chas VK3BRZ is one of many pleased that the field day has been organised. He will join with David VK3XLD and Les VK3ZLS and operate from Blue Mountain. He says: "We probably will not be out to win as much as

just have fun. We will have all bands from 50 to 1296 MHz."

John Martin VK3KWA advises that the two telephone numbers published last month are for Ian Godsil VK3DID. John said advice of this should have come to me.

John also says: "The time limit for repeat contacts will be three hours, not two hours as advised to you by Rod VK2TWR. The original intention was to make it two hours, but discussion with a number of locals revealed 100% in favour of three hours. When the logs come in, it may turn out that the nation-wide majority would prefer two hours after all. If so, I will make the change for both the spring and summer field days next time round.

"I am aiming at getting the Ross Hull rules in the November issue. Changes will be:

(a) Six metre scores to increase with distance but one point only for contacts in Es range (1000 - 2500 km), and a similar drop in score for contacts in F2 range. This will make scoring more commensurate with the degree of difficulty of the contact, and prevent six metre scores from deciding the outcome. Last year was too close for comfort in this regard

(b) Shorter duration. I am most reluctant to do this, but I have received constant complaints about the duration from some entrants and it is time to see whether their views are supported by the majority. The level of activity in the last two weeks of the contest has been poor over the last few years, so it may not make much difference!"

The West Australian VHF Group Inc

This very active group includes progressive thinking amateurs who continue to set an example for what can be achieved if you are prepared to devote time and energy, and finance, to the tasks seen to be necessary to support the day to day activities of amateurs interested in the bands above 50 MHz, particularly in the field of beacons.

I hope I can find space next month to summarise the wide-ranging Annual Report of the Group's President, Alan Woods VK6ZWZ. It is good reading.

Closure

It will be interesting to see whether the end of October, through November to December produces any interesting F2 contacts.

Closing with two thoughts for the month:

1. Ever notice that the whisper of temptation can be heard farther than the loudest call to duty? and

2. I've learned the same thing about my garden that Adam and Eve learned about theirs. It's best to follow instructions!

73 from *The Voice by the Lake.* ar

Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:-

A J	GILLHAM	VK2DG
G D (Geoffrey)	CLARKE	VK3ARP
K V (Ken)	STEVENS	VK5QW
W M	CRAWFORD	VK5XB
G R W (Graham)	VEITCH	VK6FS

William Malcolm (Bill) Crawford VK5XB

Bill's many friends were saddened to hear of his passing on 28 August 1998 at the age of 73.

Bill was first licensed in 1959 as VK5ZDE. He moved to Kingston shortly after. Success with his CW exam in late 1960 gained him his full ticket and Bill set about building an excellent shed top station.

He enjoyed home-brew construction that included solidly built power supplies, couplers and mobile gear on 40 metres.

Bill was one of the first operators in South Australia to experiment with SSB and encouraged others to try out this new mode. Two metre FM experiments across the water from Kingston to Victor Harbour with Jack VK5LR were enjoyed by both during the 60s.

He joined the WIA in April 1961 and was proud of his continuing membership.

Bill and his wife Marjorie moved to Adelaide during 1979. Bill was always a cheerful person and for many years his was a familiar voice on the 40 and 80 metre daytime nets. He enjoyed talking to his many friends.

As well as an enthusiasm for amateur radio, Bill had a fine singing voice and enjoyed nothing better than a sing-along around the piano.

Bill VK5XB is survived by his wife Marjorie, and daughters Kirsty and Alison.

Rest in peace, "whiskers"!

John Drew VK5DJ

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What's New?

New products of interest to radio amateurs

Don Jackson VK3DBB

55 Ryan Road

Pakenham VIC 3810

New KENWOOD Dual Band HT

In the USA, rumours were circulating before the 17th Annual ARRL/TAPR Digital Communications Conference that a new piece of hardware would be released. But not in the wildest of dreams did anyone come even close to what it was.

The device is a new KENWOOD dual band HT, which normally would not be very newsworthy, but this one IS different. It is a full TNC and dual band radio built into a HT.

The TNC not only has 1200 bps built in, but also 9600. As well, it sends and receives APRS messages and position reports, has a GPS interface, displays call signs of heard packet stations and their positions, displays weather information of any amateur weather stations in the area, and has built in support for DX clusters

The device will also plot the positions of any APRS station it hears onto the screen of an attached HGPS unit, and when connected to the Kenwood SSTV adapter the unit makes a very small portable SSTV station.

This HT has even been used, with a 3-element Yagi attached, to contact UHF PACSATA at 9600 bps, running only five watts!

The cost is reputed to be around the cost of a good dual band with the added cost of a TNC. And it is the same size as any other five watt dual-bander.

I can hardly wait for it to be released in Australia.

Jaycar

JAYCAR has announced the release of new items that may be of interest to our readers, particularly those with computers or who are interested in weather details.

Wireless Indoor/Outdoor Thermometer

This new product will support up to three remote sensors which will transmit to the main unit, usually mounted in the house or could be located in the shack. You can monitor a wine cellar, garage or nursery, etc, all from the one unit.

The main unit features a high/low alarm, for every sensor, minimum and maximum reading with a temperature range of -5° C to 50° C. The remote sensors are splash proof and have their own digital temperature display and can transmit up to 30 metres. Main unit (Cat QM-7220, \$119) is supplied with one sensor and extra remote sensors (QM-7221) can be purchased for \$49 each.

Hard Drive Cooling Kit

You can protect and extend the life of your computer hard drive with the simple addition of this Jaycar Hard Drive Cooling Kit. It installs in any vacant 5.25" or 3.5" slot in minutes and will dramatically improve the ventilation within the case using dual, high efficiency fans.

The air filter is easy to access and the kit is supplied with Y adapter for easy connection to any hard drive. So, if you have a problem with your processor running hot, this could well be the answer. Cat XC-5046, \$39.95.

Extremely Large Digital Clock with Humidity, Temperature and Calendar

This incredibly large digital clock also displays the date/month, day, temperature (Celsius and Fahrenheit) and humidity. The huge display measures 146 mm (w) x 95 mm (h) and is ideally suited for homes, wine cellars, offices, factories or the radio shack. The unit (XC-0232) operates on two AA size batteries.

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(continued from page 36)

sulphate of copper as speedily as it is dissolved. When this is not the case, the copper sulphate solution diffuses through the cell and is decomposed by the zinc plate, the oxygen joining with the zinc forms zinc oxide and the copper, being deposited on the zinc, looks like black mud in general appearance.

If the cell is idle or open, this action will take place most rapidly, reducing the effective output of the cell.

Average life is from four to six weeks for a local circuit, for a mainline battery of which three or more wires are supplied, is about eight weeks, and for a quadruplex battery, about five months (a Quadruplex telegraph system is one in which four messages may be transmitted over one wire at the same time, two from each end, simultaneously).

Other cells used were the Leclanche, Fuller, chloride of silver, and the Edison-Lalande Cell (more on these at a later date).

If any reader has a particular topic which they feel may be of interest to other readers, please drop me a line.

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WIA Divisions News

Forward Bias — VK1 Notes

This column has become, albeit somewhat by default, a bi-monthly affair. *Blemings Forgets Important Dates - Again.* Sigh! Sorry about that folks...

That said, I suspect not much has been missed as we've had a relatively quiet time in the Division of late with the exception of the welcome start of the fox hunting season.

Broadcasts

As mentioned at the September meeting, Waldis VK1WJ, our Broadcast Officer, has indicated, not unreasonably, that he would like at least an occasional break from presenting the Sunday night broadcasts. Please consider helping out with a broadcast from time to time as we are keen to avoid the responsibility resting on the same dozen or so volunteers who help out with everything that crops up.

Looking Ahead

February is but a few months away and with it comes the anticipation of the excitement, adventure and really wild things that occur at our AGM.

Well, I guess they aren't really that wild, nor particularly exciting. None the less they are an important part of running any incorporated organisation to ensure that the necessary formalities are performed.

Nominations for positions on the committee are welcome and, indeed, I would encourage you to become involved. For my part I am unsure whether I will stand for re-election to the role of President as the last few months have seen increasing time pressures in both the professional and personal sides of my life. Whilst I'm happy to report that these pressures have, in the main, been pleasant ones, I see the months ahead becoming more hectic leaving me with less time to do the position justice.

Divisional Leaflet

Mike VK1MJ has put some considerable effort into an information leaflet that will be going to press during late October/early November. The leaflet contains details of

repeater and packet frequencies, Divisional contacts for a range of services, and information on our regular events such as technical group and general meetings.

We intend distributing this as widely as possible to both licensed amateurs and the general public alike. If you'd like a few to have on hand or to hand around to fellow enthusiasts, please contact Mike or myself.

Coming Events

Following on from the Orionid Meteor Shower in late October, the Leonid Meteor Storm will occur on or around 18 November. Whilst the potential danger to satellites is quite real, the upside is the chance of some large scale E-layer propagation. Perfect for a bit of DX!

A reminder that the technical/packet radio group will be presenting the 1998 VK1 Amateur Radio Symposium on Sunday, 22 November starting at 9 am at the Charnwood Scout and Guide halls. Details are available both on our Web site and via the weekly broadcasts.

Our November meeting will be the last for the year, held as usual in the Griffin Centre at 8 pm on Monday, 23 November. This will be a largely social evening and we'll be having some light refreshments and nibbles to see the year out. Why not come along?

Hugh Blemings VK1YYZ
Division President

VK2 Notes

Olympic Games

The question uppermost in many people's mind at the moment is, "What are we, as amateurs, going to lose in the way of frequencies; and will it be permanent?"

The WIA is heavily involved in the Committee set up by the ACA, which includes representatives from Defence, Telstra, SOCOG, the WIA and, of course, ACA senior management from both Sydney and Canberra. Our involvement is, naturally, to protect as far as is possible the Amateur Bands and to ensure that any temporary loss of part of the 70 cm band is just that - temporary! We have now been assured that the temporary use will end on 31 December 2000! In this we are supported by the Defence Department who have insisted that this be a condition in their agreement to release this part of the band to SOCOG.

The VK2 Council has stressed the necessity to promulgate information as quickly as possible in order to keep our members fully informed of developments. I am pleased to report that our representatives were able to convince the Committee of the importance

of early, co-ordinated, simultaneous announcements by all the various parties. Many of our readers will have heard the three reports given by Michael Corbin VK2YC (VK2 President and one of our representatives on the ACA Committee) on the VK2 Sunday Broadcasts. For those who didn't, a report of the decisions taken so far is published elsewhere in this issue.

At this point it is very important for our members to realise that there has been, and will continue to be, maximum co-operation between the various sections of the Committee, even to the distribution of proposed announcements to ensure that all parties agreed on the information and that they contained no misinterpretation or misconceptions.

The actual area which will be affected has yet to be finally determined (although intentions are that, as far as possible, it will be limited to the Sydney basin only) and will be defined by thorough testing in the near future. Any licensed users in the band 421 MHz to 432 MHz which will be, or are likely to be, affected when the tests are conducted/completed will be advised.

Rest assured Council will keep you informed.

Conference of Clubs

The popular Affiliated Clubs Conference, the second for 1998, is almost upon us. Gee, is it almost six months since our last one?

Ken Westerman VK2AGW and the office staff are once again gearing up for another of these important, and very valuable, get-togethers. As with every conference worldwide, no matter how good the agenda and guest speakers are, the really important liaisons take place during the morning coffee, lunch and dinner breaks. This is when the formal meeting structure is relaxed and delegates exchange information, put forward views and suggestions, and expand on concerns in a frank and informal manner.

This informal exchange is greatly assisted by the fact that all Councillors attend the conferences and, therefore, all the various portfolios of responsibility are represented. When and where? 14 November 1998 at Amateur Radio House Parramatta, delegate check-in at 08.45 hours. Is your Club sending a delegate?

Membership

The Membership Drive with the prize-draw for an ICOM 706 Mark II, donated jointly by Icom and Amateur Transceiver Radio Centre, is going very well with, to date, ninety new applications received; and the advertising has only just got fully underway!

Have you got a non-member friend who would like to be in the draw, quite apart from

all the benefits he/she, and the hobby, gets from his/her membership? All NSW Affiliated Clubs have New Member Information Kits, or one can be obtained by contacting the office.

By the way, there are still a few people who are a little slow in renewing their membership. If you know of any in your area, why not give them a little nudge! If it is because of financial considerations, remind them that they may be eligible for concessional rates and/or fees can be paid, for both full and concessional membership, in two six-monthly payments.

WICEN

For a number of years, WICEN in NSW has been essentially divorced from the VK2 Division; in fact they are registered as a separate company.

The reasons behind this 'divorce' were numerous and are now relatively unimportant. What is important is the desire, both on the part of this VK2 Council and also on the part of the WICEN (NSW) Executive, that closer links should once again be forged.

To this end, a meeting took place recently between the Council and WICEN senior representatives to discuss ways of future co-operation. A number of agreements transpired which will allow WICEN the use of Amateur Radio House for meetings and provide a large display area for WICEN Awards and Plaques within the Conference Room. Storage facilities for WICEN equipment were also discussed and agreed in principle together with the future use of the Dural facility for WICEN exercises. As the old saying goes, "better late than never"!

Trash and Treasure

The next T & T will be held at Dural on Sunday, 29 November, after the Sunday Morning Broadcast. Vendors will be allowed to set up from 11 am. A BBQ will be provided by the Division as an expression of our thanks for the support throughout the year.

This will be the last T & T for the year. Why not come along and say Hi! You may also find that bargain you have been looking for!

Eric Fossey VK2EFY
Division Secretary

VK5 and VK8 Notes

Divisional Council

Following the passing of Don VK5ADC, who was a member of Council, it was necessary that a member be co-opted to Council to fill the vacancy.

As a result, the Council co-opted Merv Millar VK5MX. Under the rules of the

current constitution Merv will serve on Council until the next Annual General Meeting. He will be assigned a particular portfolio at the next Council Meeting.

Constitution

Jim VK5NB, who is Chairman of the Constitution Review Committee, advises that we can expect an initial (draft) version of a "revised" constitution probably within the next four weeks.

It is expected that members will have access to copies to allow them to peruse the document and provide suitable comment. I suggest that you could be doing both yourself, and the hobby of Amateur Radio in the future, a favour by taking an active interest in this matter.

Andy Thomas Back in Town

Our own South Australian astronaut, Andy Thomas is back in town. However, there has been very little chance to spend time either seeing him or talking with him. Since his return to Australia he has been travelling to various venues, many interstate, and conducting seminars and making presentations. This has been to the extent that even his family has seen little of him.

I did have the opportunity of a pleasant chat with Andy by telephone and was able to confirm the situation regarding a number of matters including that of QSL cards for the MIR Space Station operation as VK5MIR (see *QSP News* elsewhere in this issue of *Amateur Radio*). There is no doubt that Andy obtained great personal pleasure and benefit from having access to Amateur Radio whilst on the MIR mission.

Andy has presented talks and lectures to many different organisations as part of his duties and commitment to NASA. He will, in fact, have made around 30 or more presentations over a period of 14 days. Unfortunately, I was unable to be present at his recent talk given at the Adelaide University.

I have been provided with some excellent photographs taken of and from the MIR Space Station, some of which include shots of Adelaide and surrounding areas of South Australia. I hope to use a couple of these photographs in connection with the "special event" VK5MIR QSL card. Andy now also has a new VK5 callsign. However, he has had no time to make use of it as yet.

Burley Griffin Building

Negotiations continue with respect to our occupancy of the Burley Griffin building. When dealing with Local Government it may seem progress is not as immediate as we might wish. Rest assured that the West Torrens Council seem to be taking an

approach in which they are very understanding of our interests.

At the September General Meeting of the Division the members agreed with the approach being taken by Council in our negotiations. A motion was passed which set a general figure which should not be exceeded with regard to outgoing costs for occupancy of the building. Such action seems reasonable and still allows us some room for manoeuvre in our negotiations.

As a result of this the Division was able to make a suggestion to the West Torrens Council which we hope will be successful. The suggestion has been acknowledged and we are now awaiting further word on this. Further information will be provided as it comes to hand.

Recruiting Campaign

You will be hearing more regarding this as time passes. It is seen as imperative that the WIA increase its membership base to allow us to have any chance of reasonable representation of our hobby.

I suggest to you that a most important part can be played by you as an individual, and also by the various Radio Clubs, towards encouraging other operators to join and thus help make the load lighter. In this day and age we need as much "clout" as we can muster and this can only be provided by numbers of members.

I had discussions with the VK7 Division President, Ron Churcher VK7RN, whilst he was here in Adelaide, as well as with other senior members of our organisation on both a state and national basis. It seems that, almost without exception, there is agreement on such matters. You may also very soon hear of material being produced at a Federal level which aims towards improving our operations. This material, and actions at Divisional level such as production of a revised constitution, should go some way to helping.

Meeting Program

For the last 19 months I have been looking after and arranging the program for our General Meetings. However, I feel that I am fast running out of ideas in this area of our activities.

I would be very interested to hear of someone who would like to take on the task of arranging the Meeting Program. You do not need to be a member of Council and I can assure you that the task is certainly not onerous and could indeed be made very interesting.

On the subject of meetings, the matter of a "social event" for the month of December was discussed at the September General meeting. It became clear that December is a very busy month, and that Amateur Radio

Club News

Melbourne Packet Radio Group Inc

At the next meeting of the Group on Monday, 9 November, John Hill VK3WZ will give a talk on using PACTOR in HF communications. This seems to be a growing area of interest and there is a solid core of amateurs who are quite passionate about the abilities of this mode. Come along and hear all about the finer points of PACTOR and take the opportunity to ask any questions you may have in this regard.

Nothing else to report this month, but next month in this column we will bring you a report on the Victorian Packet Network Planning and Coordination meeting held on the 31 October.

The Group meetings are held on the second Monday of each month at 1930 hrs at the Moorabbin and District Radio Club rooms, Turner Road, Highett in Victoria (Melways 77 J9). All are welcome. Enquiries should be addressed to MPRGi, PO Box 299, St Albans, VIC 3021, or via packet to MPRGCM@VK3BBS.#MEL.VIC.AUS.OC Peter McEwen VK3FEE

Moorabbin and District Amateur Radio Club (VK3APC)

The Club meets at 8.00 pm on the first and third Fridays each month, and every Tuesday morning at 10.00 am. Come and join us at the Club rooms in Turner Road, Highett - all are welcome.

Theory classes for prospective amateurs are starting soon, so contact the Club for information.

All correspondence should be addressed to: The Secretary, Moorabbin and District ARC, PO Box 58, Highett VIC 3190.
Ken Bridger VK3JII
Publicity Officer

Shepparton and District Amateur Radio Club

The Shepparton and District ARC held their annual "Communications Day" at the Youth Club Hall, Shepparton on 13 September 1998, and it was a great success!

All tables were booked and some 150 people were admitted. Traders reported good

VK7JG, have done a sterling job in keeping the repeater operational. At times it has been extremely difficult working in sub zero temperatures.

We so often take the repeaters for granted and fail to appreciate the effort and selfless dedication of both these amateurs in maintaining the repeaters and keeping them operational.

Work has also been carried out in the North-western branch on their repeaters at Mount Duncan and Lonah. Both needed urgent work after winter damage to their antennas. Our thanks go to VK7ZTI, VK7ZDJ, and VK7KAN for going out of their way to keep them operational.

JOTA

Last month there was considerable activity associated with JOTA, all branches being involved. Most activity seemed to be centred on the north-west coast of the island. As I am writing this before JOTA happens, I can only report on proposed activity.

The Northern Branch based most of their activity at the local TAFE college, although there was a small station at Queechy, located at the High School. Activity in the south was located at scout camps.

We would like to acknowledge those amateur operators who went out of their way to erect antennas and install equipment at portable locations, often under difficult and trying conditions.

Branch Meetings

The Northern Branch will be meeting this month at the Launceston College of TAFE, Alanvale campus in Block "B" at 7.30 pm and there will be a lecture by a representative from Ericsson on communications networking. All are welcome.

In December, we are planning to meet again at Myrtle Park for an end of year BBQ. Myrtle Park is approximately 40 km north-east of Launceston, being nestled between Mount Barrow and Mount Arthur. It is quite cool because it is higher than it is in Launceston. Bring your own goodies and don't forget to bring some warm clothing as it rapidly gets cold.

The Southern Branch will be holding their BBQ at the Domain Activity Centre; for details, listen to the Sunday morning broadcast. The North-western Branch usually hold their end of year BBQ at Legion Park in Ulverstone, so listen to VK7WI for the date and time.

Ron VK7RN will be here next month and I am certain he will have plenty of things to report. All news for inclusion can be forwarded to him QTHR.

Robin L Harwood VK7RH

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operators are well catered for with the various Radio Club social activities coming up to the Festive Season. Over past years such a Divisional activity seems to have become less and less popular.

One suggestion made was that a "social event" during the month of January may be more likely to appeal to members. To this end we invite further comment from you and look forward to hearing your opinions on this approach. The Divisional Council will be considering the matter at its coming meetings. It would be really nice to hear what you think.

More on Towers

In last month's column I provided information regarding the situation within South Australia and included some comment regarding legal precedents that exist in this state.

Several requests for details of case and court references have been received. I have temporarily misplaced my copy of the determination by Mr Justice Wells in the Supreme Court regarding Amateur Radio towers and thus do not have such information immediately available. I will provide details for you as soon as possible.

For now, the very best of greetings to you from myself and on behalf of the Council of the VK5/VK8 Division.

Ian J Hunt VK5QX
Division President

"QRM" News — VK7 Notes

This month I am filling in for our Divisional President, who is on the mainland and therefore unable to meet the deadline. The rather hectic year is rapidly drawing to a close. November will see the Northern and Southern branches conduct their final business meeting before the Annual General Meeting in February. Both branches are holding social activities during December but the North-western branch will meet as usual.

Council Meeting

Your Divisional Council will be meeting in Hobart on 15 November, the venue being the Domain Activity Centre. All members are welcome to attend but only councillors are entitled to vote. I am certain that our Divisional President will be reporting on his recent mainland journey.

Repeaters

Now that it is Spring, outside work has been carried out at most of the repeater sites after the winter chills. The Northern repeater on Mount Barrow suffered from ice and snow and the two repeater officers, VK7TIM and

sales and stated they would be returning next year.

The standard of equipment offered for sale was very good. We look forward to 1999 being even bigger and better.

Alex Butters VK3LAA
Secretary/Treasurer

Ipswich and District Radio Club

Members of the Ipswich and District Radio Club are gearing up to commence amateur television (ATV) transmissions from the repeater site at Mt Crosby.

The President, Ken Page VK4AKP, is heading the team working on the project. Permission to operate from the site and a repeater licence have been granted, and work is well under way building the necessary gear for individual members to operate alongside the repeater itself.

Test transmissions have already been carried out with very good results. Good signal reports have been coming in from as far away as Toowoomba. ATV is just one aspect of the Club which operates the following repeaters and BBS: 146.725 MHz, VK4RKP, Voice, at Mt Crosby; 145.075 MHz, VK4RAI, Packet user to user, Mt Stradbroke; 146.900 MHz, VK4RAI, Voice, Mt Stradbroke; 147.175 MHz, VK4RWM, WICEN North Ipswich (Syd Lyon VK4SL is the WICEN representative for Ipswich and Graham Reuter is the WICEN representative for Moreton); 438.375 MHz, VK4RWM, Voice, Club Rooms in Deebing Street; BBS VK4WIP-1, 145.075 MHz access via VK4RAI, 144.825 MHz access via VK4RZD; ATV 444.250 MHz out, VSB, Mt Crosby, 1250.00 MHz input, FM, Mt Crosby; under development, 145.075 MHz, standard 1k2 AFSK, Mt Crosby.

For further information, contact Ken Page VK4AKP on 0411 260 740, or via packet VK4AKP@VK4WIP.#IPS.QLD.AU.OC; or the Secretary, Bob Beck VK4CPM at the same packet address, or e-mail to Bobbeck@bigpond.com.au; or write to I&DRC, PO Box 250, Ipswich, QLD 4306.

Club meetings are held every second and fourth Wednesdays at Deebing Street, West Ipswich at 1930 hours. Visitors are most welcome.

Bob Beck VK4CPM
Secretary

West Australian Hamfest

Yes, it's on again. The Northern Corridor Radio Group is presenting the 1998 Hamfest in Perth on Sunday, 8 November at the Cyril Jackson Community Centre in the suburb of Bassendean. Entry to the event by car is via Fisher Street (look for the signs), or by train to the Ashfield rail station.

Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Repeater Procedures

I endorse the sentiments expressed by Sid VK2SW and Ken VK3AFJ on getting contacts on country two metre repeaters, although, to be fair, my own experiences have been more favourable than Ken's. Also, it's not only rural repeaters that are quiet; even some capital city repeaters do little more than boost the ACA's coffers and get a listing in the Call Book.

It is generally agreed that there are more listeners than talkers on repeaters. That a call went unanswered certainly did not mean that it was not heard. Generating activity means getting more listeners to become talkers.

The following points suggest reasons for the lack of contacts that Sid and Ken report. Later points propose improvements to operating practices that could increase activity on amateur repeaters.

1. Some confine their VHF contacts (whether simplex or repeater) to a small group and will seldom answer a general call from a station not known to them. However, contacts are possible if these stations are called directly by the travelling station.

2. Most amateurs have been licensed for 15 years or more and have 'been there and done that', so they often become spectators or listeners rather than active participants.

3. The technical challenge to a home station of making contacts through their local repeater is normally nil.

The Hamfest commences at 10 am and promises to be the best amateur radio, CB and communications event in Perth this year.

Make sure you bring your QSL card for the QSL board and any recently constructed equipment or antennas for the homebrew competition as awards will be presented. There will be lots of things to see and plenty of pre-loved equipment, as well as new communications gear and prizes.

As usual, there will be food and drink available on the day and entry is only \$3.

4. 'Mike-fright' is not only something with which JOTA supervisors have to contend; it afflicts a surprising number of amateurs too.

5. Many repeater contacts are quite boring to listen to as they do not progress much beyond the 'rubber stamp' exchange, or cover topics that are of little interest to others. This may reduce the number of people who monitor two metres, many preferring instead to take advantage of the broadband receive coverage of their equipment and monitor other frequencies.

6. Those who set their equipment to scan several memory channels may hear a call but may miss the calling station's full callsign because of the time it takes for the set to scan all frequencies. Calling stations should perhaps key their transmitter for a few seconds before speaking to give time for receiving stations to lock on to their frequency.

7. In most areas, to announce that one is listening is the accepted way of obtaining a contact on a repeater. This is out of step with normal operating practice on HF and VHF simplex frequencies and leaves others in some doubt as to whether the calling station is actively seeking a contact.

To remove any doubt as to the caller's intention, a very short (1x1) CQ call is suggested. This takes no longer than the alternative, but is a clear statement that the calling station desires a contact.

The WIA should actively encourage the use of the CQ call on repeaters by amending the repeater operating conventions as published in the Call Book.

Peter Parker VK3YE
12/8 Walnut Street
Carnegie VIC 3163

Two Metre Mobile Operations

I have read the letter from Sid VK2SW in the September edition of *Amateur Radio*, and then that of Ken VK3AFJ in October, and I find myself wondering if I use a different 2 m band (although Sid will probably recall my last QSO with him on the Wagga repeater on 13 March this year!).

I gained my amateur licence in December

For further information, or to confirm your position at this event, you can contact the Hamfest line on 08 9402 4816, fax to 08 409 1203, e-mail to ncrg@ncrg.org.au or write to Hamfest, PO Box 244, North Beach, WA 6920.

If you are on-line, the address is <http://www.ncrg.org.au/hamfest>.
James McBride VK6FJA
Hamfest Committee/NCRG President

1987 and had a 2 m set installed in my car within days. In the years following I was rather active on Melbourne repeaters, both on 2 m and 70 cm. Since my retirement in early 1990 we have had the opportunity to travel extensively throughout much of Australia for a number of months each year, as regular listeners to the 20 m Travellers' net will be aware. My 2 m and 70 cm set has always been close at hand and I must say that I have had a great number of contacts, usually on 2 m, in most parts of the country, and certainly in all states and both territories.

I put out listening calls on the local repeater(s) and, if no contact is made, will probably repeat those calls every ten or fifteen minutes while within range of a repeater. I never break in on QSOs to make my contacts. In fact, I usually let a repeater 'cool down' for some ten minutes after others have been using it, to avoid pressuring those users into feeling obliged to reply. Of course there are some repeaters where a response is rare or non-existent, but there are many where responses are regular. Many of these contacts lead to personal meetings. One example was a very pleasant first meeting and subsequent dinner with the editor of *Amateur Radio* and his wife (plus VK3OM and his wife) in Alice Springs a few years back!

Where there is no repeater at all, and there are many such places throughout this rather large country, I leave the 2 m set on 146.500 MHz, and will often put out a listening call in a 'repeater-less' town. This has led to contacts in places like Kununurra and Broome.

On one occasion midway between those two towns I was more than a little surprised to hear a clear signal on that frequency. The source of the signal was more than 100 km distant. It came from a VK3 station who was aeronautical mobile above the Wolfe Creek meteor crater. We had a brief lunchtime meeting at the Halls Creek aerodrome an hour or so later.

Some further comments. I do not find Sydney a good place for 2 m contacts and I expect that many visitors to Melbourne may say that that applies there too.

These cities are perhaps too big and have a bewildering number of 2 m and 70 cm repeaters. But in all other capitals I have had numerous contacts.

I am not suggesting that this applies to Sid or Ken, but it is not at all uncommon to hear a weak, perhaps unintelligible signal. This may be a visitor using a handheld set, inadequate to put a clear signal into the repeater. And, of course, such a signal, if it can be read at all, does not encourage a response.

For what it is worth I use 45 watts into a roof mounted quarter wave antenna. In VK7

I have used a handheld with a magnetic base holding the quarter wave 2 m antenna onto the roof of the hire car. It also works remarkably well on 70 cm.

So my experience has been rather different from that of Sid and Ken. I would encourage all amateurs to give 2 m a try in 'foreign parts', and never to be discouraged by a lack of response to the first listening call.

On a number of occasions I have had someone come back to me after a number of calls, telling me that he (or she) had heard my earlier calls but had not been able to respond at that time.

And perhaps one final point. These days many amateurs are using rigs scanning ten or more repeaters on more than one band. With this in mind I normally try to speak slowly and mention the name of the repeater or its frequency (or its band where more than one repeater has the same name).

I learnt that the current debate whether or not to make Morse a compulsory skill is not a new thing. For example, page 11 of July 1953 AR carried four letters from members discussing the issue.

This practice has two advantages. Firstly, it means that my listening call lasts longer, hopefully long enough to stop the scanning set. Secondly, it means that the potential respondent, who may be outside, in another room, or doing other things, has a better chance to go to his set, stop it scanning and know on which repeater to respond.

Let's hear it for 2 m!

Jim Brown VK3DL
Yan Yean Road
Yarrambat VIC 3091

Times Change – or do They?

I was fortunate enough to be able to attend the Healesville Amateur Radio Club's Hamfest on 3 October, and picked up a bundle of old *Amateur Radio* magazines. Reading through them was quite interesting to me and, amongst other things, I learnt that the current debate whether or not to make Morse a compulsory skill is not a new thing. For example, page 11 of July 1953 AR carried four letters from members discussing the issue.

VK7OM, then a Federal Councillor, commented that "I am not so bigoted that I cannot see that *Amateur Radio* would benefit from the activities of advanced technicians who are interested in v.h.f. and u.h.f. operation where phone is used almost exclusively". In

other words, he supported a no-code licence, as did two of the other three writers.

VK2RH decried the possible introduction of a "novice licence", saying that, "Do not our limited bands contain enough faulty transmissions now, from A.O.C.P. holders, without inviting far larger percentage from people with even less technical knowledge and ability?" I seem to have heard that somewhere else too!

Even in those days, it was customary for any letter commenting on Federal Executive to be referred to it for 'clearance', as it were, before publication. But some very robust debate was allowed. In March 1952 (page 20), VK5PS referred to that august body as follows: "... in my personal opinion the essential difference between F.E. and an ostrich, is the fact that an ostrich cannot manufacture its own sand!"

There must have been a lot of dissatisfaction with the Executive in those days, because earlier in the same letter he explained that in the VK5 monthly notes for February of 1952 he included a paragraph which opened with, "Federal Executive has been placed on a pedestal by VK5 members together with Ned Kelly, three card tricksters, and thimble and pea experts". Not surprisingly, Federal refused to allow this to be published in the original notes, but apparently allowed it in the letter referred to above.

Don Jackson VK3DBB
55 Ryan Road
Pakenham VIC 3810

QSL Know How

I have just finished reading the *How's DX?* column which this month was highlighting the problems facing new QSLers (me being in that category).

The article mentioned things about direct QSLing, etc and the problems associated, and gave examples of countries that don't have bureaux, etc or don't forward to non-members, etc. All these bits of knowledge come with experience and I presume that there is an awful lot of experience out there amongst our ranks.

Would it be possible to publish an article that gives a more detailed insight into this situation, with listings of countries that do and don't, etc, etc? I realise that I am just proposing what might turn out to be quite a lot of work for someone but I, for one (must be many like me?), would love to be able to benefit from this experience about QSLing problems.

Allan Meredith VK2NNN
ameredith@ozemail.com.au

(Any takers? The article by Neil Penfold VK6NE in this issue may also be of some use. Ed)

ar

Ionospheric Update

Evan Jarman VK3ANI
48 Alandale Court, Blackburn VIC 3130

Solar Activity

The quarter did not start well. Activity during July was low to very low. All indicators of solar activity were lower than expected. The IPS reported that *the relative lack of activity was surprising considering the current phase of the solar cycle.*

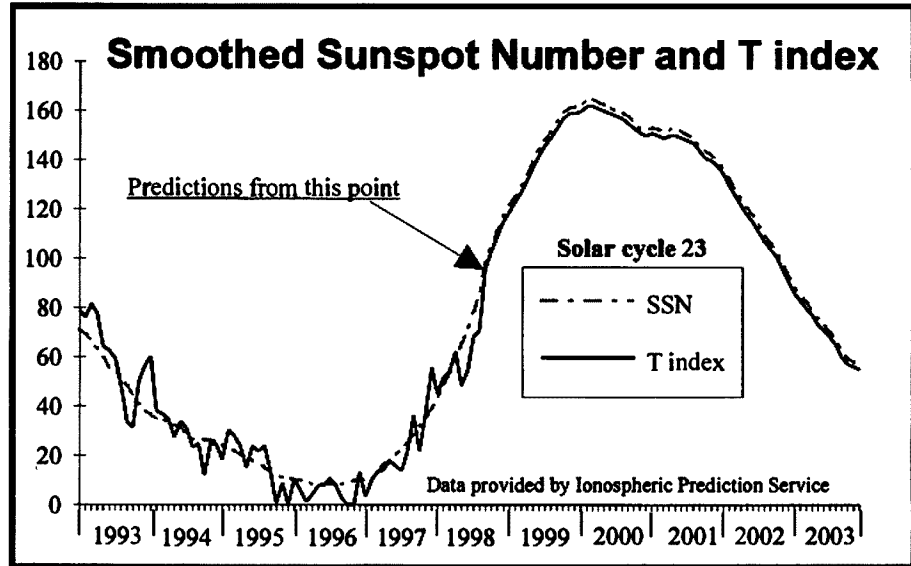
There was a significant rise in activity during August but this activity was due to one dominant region. The class X1/3B flare at 2212 UTC on 24 August had an associated proton/PCA event from 0100 UTC 25 August until 1230 UTC 29 August.

In September activity was only moderate, increasing to high on 29 September due to a class M7 flare. An accompanying proton event started at 1535 UTC on 30 September and ran until 0900 UTC on 2 October.

Ionospheric Activity

Spread F was observed around Australia during local night hours from 2 July through to 5 July. Spread F was again observed during the geomagnetic disturbances on 23-24 July and 30-31 July. Neither disturbance produced any significant MUF depression.

HF circuits that involve the polar regions were severely affected by a polar cap absorption (PCA) event on 28 August, associated with the class X1 solar flare. Polar



circuits were again affected in September by polar cap absorption events on both 25 and 30 September, the first being stronger.

Darwin also experienced some MUF enhancements in the early evening hours. The strongest being 80% between 1100 and 1600 UTC on 30 September.

Geomagnetic Activity

There were three geomagnetically disturbed intervals in July. These were on 16, 23-24 and 31 July. The first two were coronal hole related. The cause of the last was unclear.

Storm activity was reported on 27 August with the local A index rising to 54; the planetary index reached 112. It was due to activity associated with the class X1 flare on 24 August.

The largest disturbance in September was due to the class M7 flare on 23 September; it was also a coronal mass ejection (CME) event. On 25 September the planetary A index reached 121. The Learmonth A index reached 69.

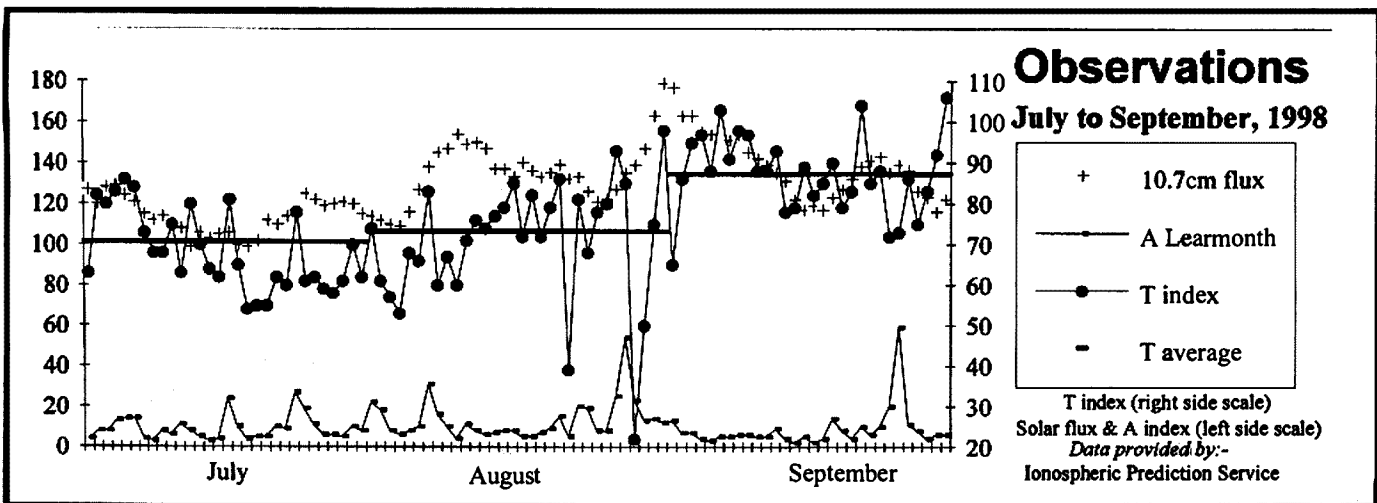
HF Fadeouts and Flares

The Ionospheric Prediction Service has added an online monitor of flares and fadeouts to their Web server. It is titled "Current X-ray Flux and Fadeout Monitor" and can be found in more than one place, the space weather status page www.ips.gov.au/asfc/status_panel/ and the Australian HF page www.ips.gov.au/asfc/aus_hf/.

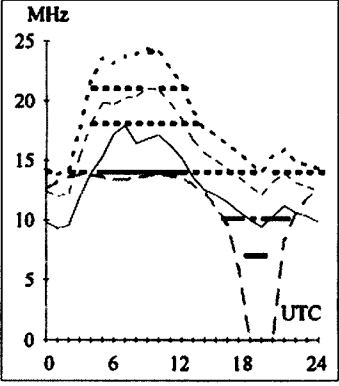
ASFC stands for Australian Space Forecast Centre which is a division of the IPS. The page gives the current progress of a flare or its subsequent fadeout as they are revised every five minutes. The flare monitor graphs the flux and gives an estimate of the time that flare will be finished. The fadeout monitor shows the associated fadeout's extent in both frequency and location.

This is the first solar cycle where on-line information is available via the Web. It will prove to be more valuable as solar cycle 23, which is just kicking in, develops.

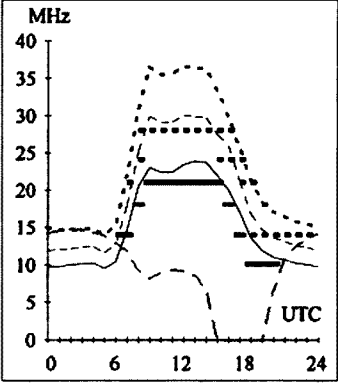
ar



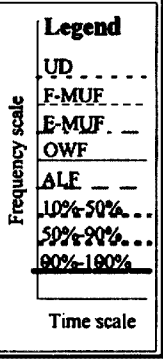
Adelaide-Capetown 226
Second 4F5-13 4E0 Short 10154 km



Brisbane-Dublin 335
First F 0-5 Short 16670 km



November 1998
T index: 102



HF Predictions

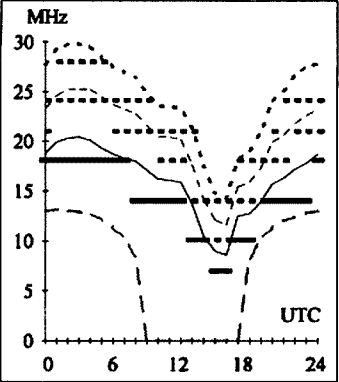
Evan Jarman VK3ANI
34 Alandale Court, Blackburn VIC 3130

These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. The frequencies, identified in the legend, are:-

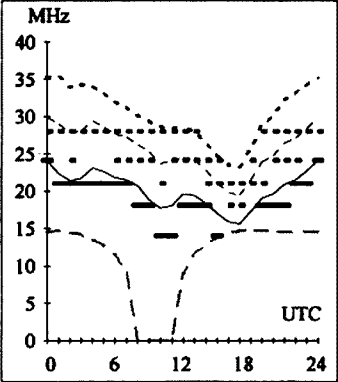
- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

Also shown hourly are the highest frequency amateur bands in ranges between these key frequencies: when useable. The predictions were made with the Ionospheric Prediction Service program ASAPS version 4. The path, propagation mode and Australian terminal bearing are also given for each circuit.

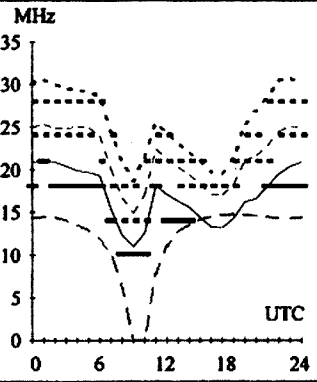
Adelaide-Honolulu 57
Second 4F7-13 4E0 Short 9160 km



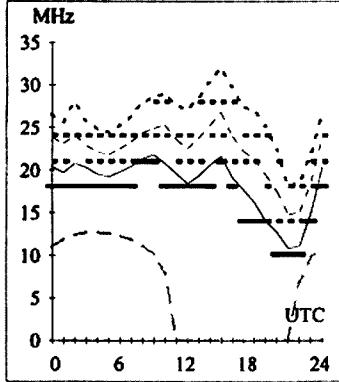
Brisbane-Lima 122
First F 0-5 Short 13056 km



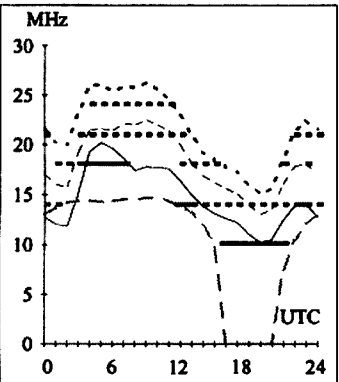
Canberra-Barbados 123
First F 0-5 Short 16232 km



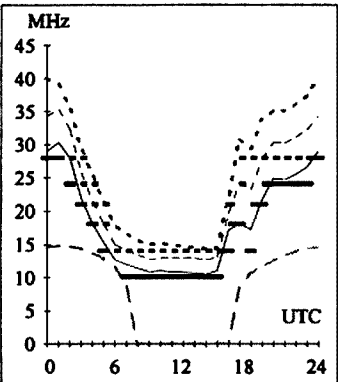
Darwin-Bangkok 310
First 2F7-18 2E0 Short 4435 km



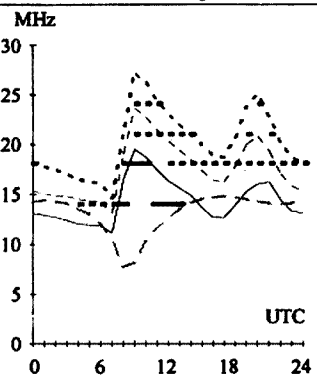
Adelaide-Lusaka 246
Second 4F4-10 4E0 Short 10788 km



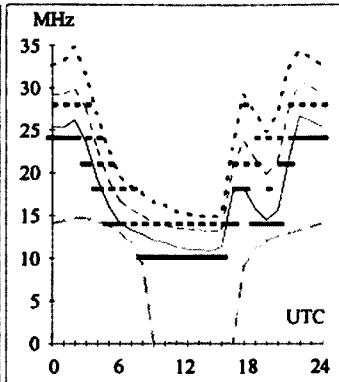
Brisbane-Seattle 44
First F 0-5 Short 11845 km



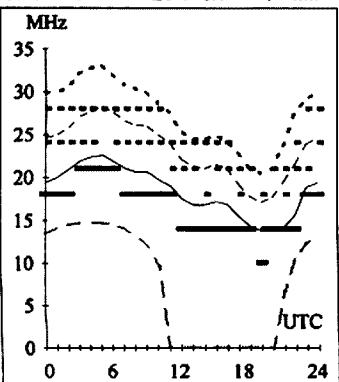
Canberra-London 136
First F 0-5 Long 23042 km



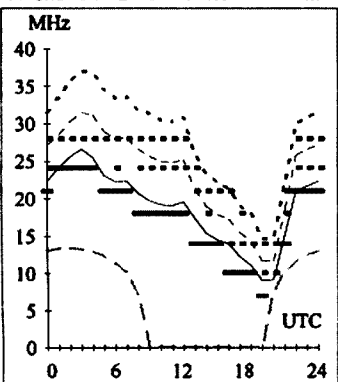
Darwin-San Francisco 54
First F 0-5 Short 12316 km



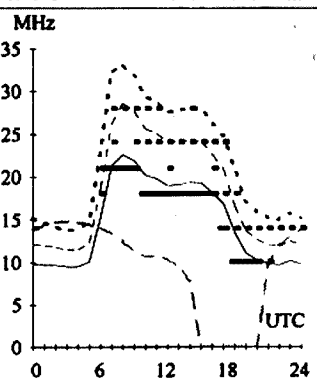
Adelaide-Singapore 311
Second 3F11-21 3E0 Short 5414 km



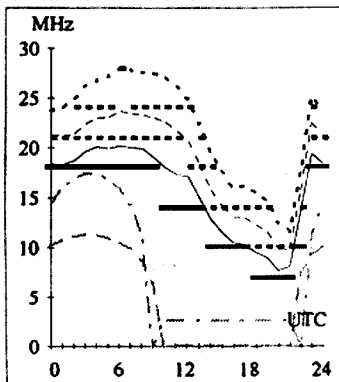
Brisbane-Tokyo 348
Second 3F6-12 3E0 Short 7159 km



Canberra-London 316
First F 0-5 Short 16982 km



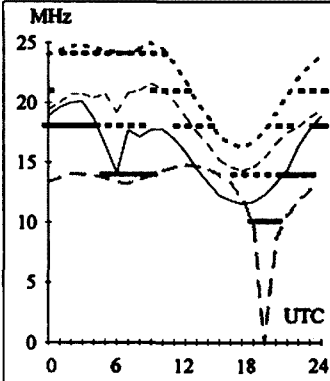
Darwin-Seoul 356
Second 3F11-19 3E1 Short 5576 km



Hobart-Dakar

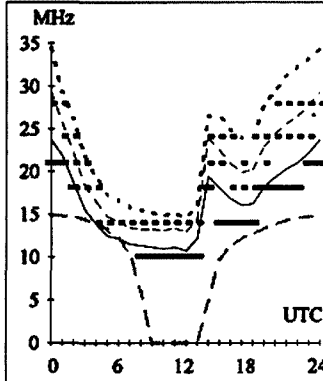
209

First F 0-5 Short 16556 km

**Melbourne-Chicago**

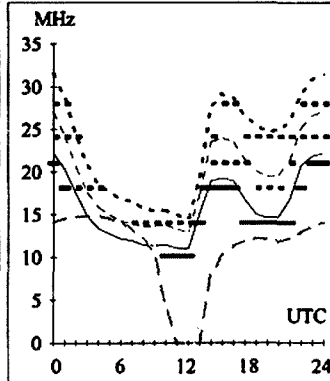
67

First F 0-5 Short 15569 km

**Perth-Washington**

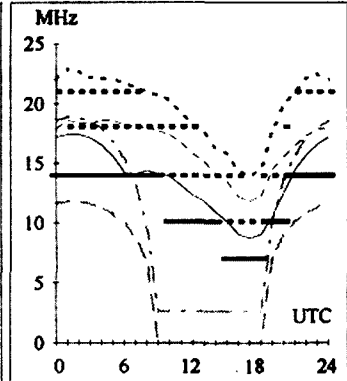
53

First F 0-5 Short 1861 km

**Sydney-Invercargil**

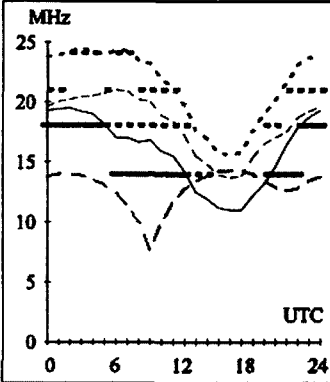
139

First F 0-5 Short 2017 km

**Hobart-Montevideo**

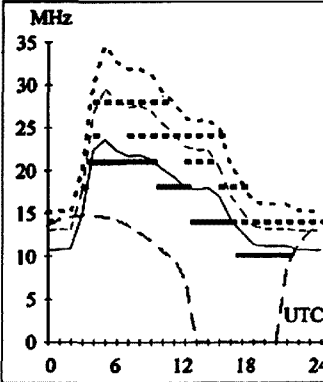
161

Second 4F6-9 4E0 Short 11043 km

**Melbourne-Moscow**

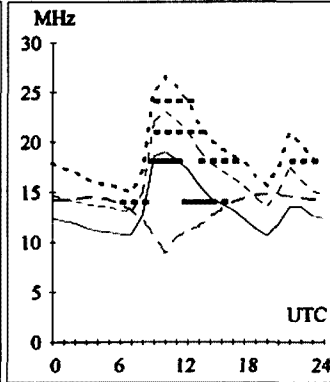
316

First F 0-5 Short 14428 km

**Perth-London**

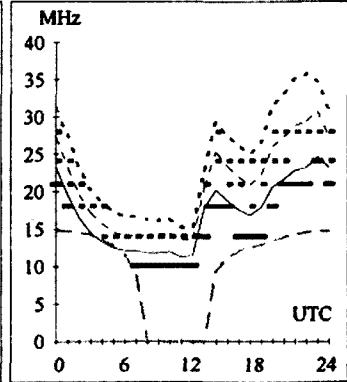
133

First F 0-5 Long 25543 km

**Sydney-New York**

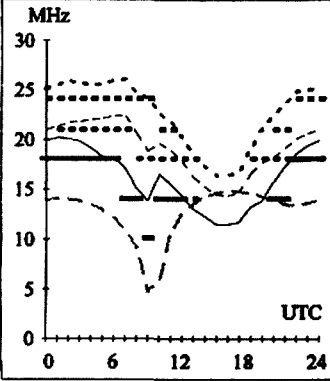
66

First F 0-5 Short 15989 km

**Hobart-Surinam**

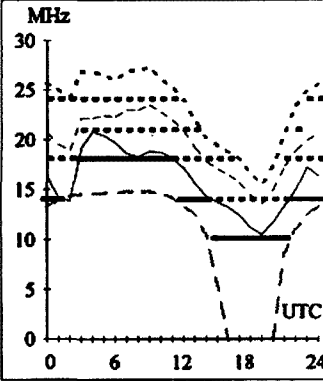
145

First F 0-5 Short 15362 km

**Melbourne-Nairobi**

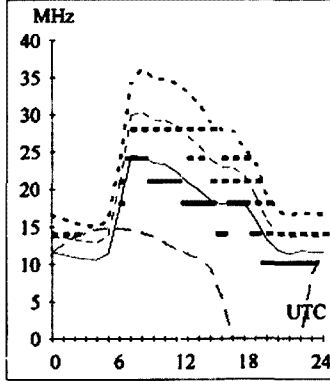
258

Second 4F3-9 4E0 Short 11500 km

**Perth-London**

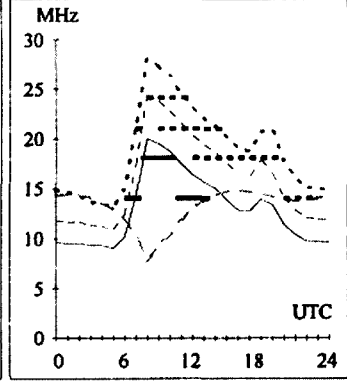
313

First F 0-5 Short 14451 km

**Sydney-St Petersburg**

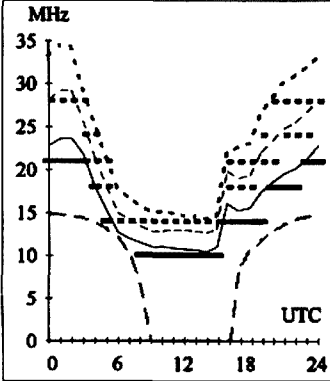
143

First F 0-5 Long 25123 km

**Hobart-Vancouver**

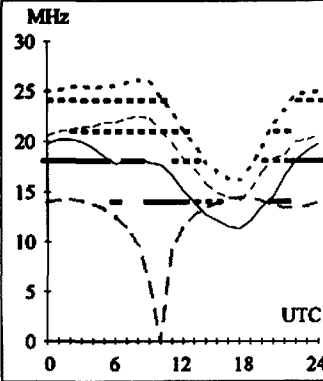
49

First F 0-5 Short 13428 km

**Melbourne-Santiago**

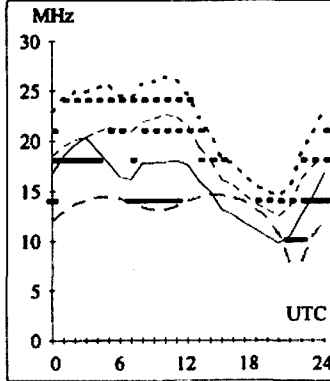
150

Second 4F4-9 4E0 Long 11272 km

**Perth-Rio de Janeiro**

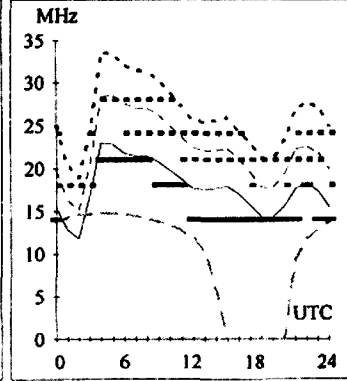
203

First F 0-5 Short 13523 km

**Sydney-Tel Aviv**

287

First F 0-5 Short 14173 km



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- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
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- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
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- **RF capacitors** - high voltage and current, suitable for high power HF amplifiers and ATUs. Brian VK2GCE, 02 9545 2650.
- **Yaesu FR-101** receiver, 160 to 2 m, all options fitted, digital display, good working order, \$300 ONO. Ray VK2COX, QTHR, 02 6345 1911.
- **Parts collected for a big linear** I'll probably never build: 813s with sockets, filament transformer, HT transformer, numerous high voltage capacitors, phone for details, make me an offer! Roger VK2AIV, QTHR, 02 4234 1431.

- **Yaesu FL-2100B** HF linear, good condn with spare set of valves, \$600, or swap for dual band mobile txcvr. David VK2DPD, 02 4397 2385, dougie@integritynet.com.au.
- **Shack Clearance: Kenwood TS-930SAT** HF txcvr, s/n 3051044; **MC-50** mic; **SM-220** station monitor, oscilloscope, s/n 840257; **Kenwood HS-5** headphones; **Drake TV 3300-LP** low pass filter; **Kenwood TR-9000** 2 m txcvr, s/n 1023189; **B09 System Base**, s/n 0050785; **Kenwood PS-20 PSU**, s/n 0050031; **Kenwood SP-100** speaker, s/no 0050785; **Scalar 2 m** magnetic base ant; **Daiwa DC 7011** rotator & control, s/n D09302; **TH3-Jnr** beam ant on pole; **LDM-815** Grid Dip Oscillator; **Iambic** keyer; **TAPR TNC-2** packet TNC; **AEM 4610** Maestro modem; **Kenwood dynamic hand mic**, 500 ohm, 6 pin, up-down button; **IDS 445** dot matrix printer; **Tandy 1000 PC**; **T 2000** temp controlled soldering iron. Bruce VK2BAV, QTHR, 02 9971 7797.
- **Icom IC-740** txcvr, in-built 240 V 20 A power supply, Shure 444 mic, \$650. **1 kW LP filter**, \$50. **Drake 2000 WATU**, \$150. **Tower, 9 m** free-standing, dismantled, in sections, ready to re-erect, with Hy-Gain TH3 10/15/20 tri-band antenna, Belden lead-in cable and rotator, \$300. **Mini-tower, 8.7 m**, \$40. Manuals and instructions. The lot, \$1000. Chas VK2NPX, 02 9521 2637.
- **Ten-Tec Paragon** HF txcvr, 100 W, general coverage receiver, \$1200 or offer. Adrian VK2ALF, 02 6452 5555 (BH), 02 6452 4338 (AH).
- **Estate late John Gray VK2BGJ. Kenwood TS-430S** HF txcvr, s/n 3050570, tech manual, \$800. **Kenwood AT-200** ATU, s/n 841526, \$100. **Welz SWR** meter, \$100. **BWD heavy duty PSU**, s/n 52040, \$150. **Kenwood R-1000** communications receiver, s/n 102147, \$400. **Handic 0050 Scanner** UHF/VHF, s/n 001089,

- \$300. **MFJ-1278** multi-mode data modem, s/n 30024525, \$250. **Yaesu FT-709** UHF handheld, s/n 040040, \$150. **Yaesu FT-4700RH** VHF/UHF mobile txcvr, front panel detaches for remote mounting, 50/40 W, s/n 1E450189, \$500. **Yaesu FT-8500** VHF/UHF txcvr, FS-10 controller separates as above, \$500. **Yaesu YD-844** desk mic, \$80. **Tony VK2BOA**, 019 921 491, aob@hunterlink.net.au.
- **Kenwood TS-830S** txcvr, **SM-220** station monitor with bandscope, **AT-230** ATU, **VFO-230** ext VFO, **SP-180** spkr, **TS-600** 6 m txcvr, all mode, all with manuals, all in good condn, \$1500 for complete station. Phil VK2DNO, QTHR, 02 4995 6139.
- **Kenwood TS-830S** txcvr, s/n 1041713, matching **AT-230** ATU, manuals, **MC35S** microphone, good working order, \$600. **Len VK2CGQ** (ex **VK4CGQ**), 50 Faringdon Village, Nambucca Heads NSW 2448, 02 6568 8435.
- **Yaesu FT-209RH** 2 m handheld txcvr, 140-150 MHz, 5 W output, new battery, case, plus **YH-2** headset/mic for VOX hands-free use, **VGC**, \$260 the lot. Peter VK2BPO, QTHR, 02 9713 1831.

FOR SALE VIC

- **Heathkit HW8**, four band (80, 40, 20, 15 m), low power CW txcvr, kitset, complete as new, ready to assemble, all documentation including copies magazine reviews, lots of suggested hints and kinks, \$150. Reg VK3CCE, QTHR, 03 9509 1471.
- **Hills tower**, 100 ft, four sections with winch and guides, dismantled and ready to go, \$1000 ONO. M Rozbicki VK3DXI, 03 9870 2170.
- **Motorola R2200/R2400** communications service monitor, \$4500. **Motorola S1059B** test set with leads, \$500. **Motorola R1033A** test set, \$600. **Tektronics 2205** oscilloscope, \$800. **Tektronics CMC250** frequency counter, \$450. **P K Bennie** VK3KR, phone 03 5144 5828 or fax 03 5144 5000 only.
- **VK3ATN log periodic beam antenna**, 8 el, 13-30 MHz, good condn, complete, mostly stainless steel hardware, packed ready to be shipped to you, \$450. Bob VK3AQK, 03 5744 1676.
- **Cushcraft 215WB** 2 m 13 element broadband Yagi, handbook, good condn, with all mounting hardware, \$125. **Mini tower**, triangular, free standing, 13'6" high, 3' base, approx 9" at top, ideal for satellite antenna mount, easily transportable, \$75. **Cushcraft 6 element 470 cm Yagi**, good condn, no handbook, \$40. **Two incomplete homebrew Yagis**, 10 el on 2 m, 15 elements on 470, both on long 25 mm square booms, a minimum amount of work would see these going, \$40 the two. Harold VK3AFQ, 03 9596 2414, e-mail hepb@alphalink.com.au.
- **TH3JR** with **KR400** rotator, \$350. **TS-520S** txcvr, good goer, \$300. **FT-101**, needs second mixer box, or wreck, \$150. **Vintage Hallicrafters**

SX88 Skyraider, complete with handbook, needs work, \$250. **FT-221**, front end Rx problem, TX OK, digital readout, \$150. Max **VK3V1**, 03 9354 5130.

● **Yaesu FT-757GX HF** txcvr, VGC, \$550 ONO. **DSE D-3800 PSU**, 3-15 V, 25 A DC, EC, \$200. Graeme **VK3GPT**, 03 5962 6098.

● **Kenwood TS-130SE**, fantastic mobile or base rig, with manual and original box, \$650.00. **Homebrew Power Supply** to match, 20A, \$80.00. **Yaesu FT-212RH 45 W** mobile txcvr, ex condn, with manual, \$225.00. Sell the lot for \$850.00. Rob Higgins **VK3JKA**, 0418 372 958.

● **Kenwood TS-520S**, mic, manual, \$450. **Kenwood TR-7600 2 m** txcvr, \$175. **Kyoritsu SWR** meter, \$75. Ron **VK3AEO**, QTHR, 03 9707 3405.

● **Two inch diameter aluminium tubing**, \$3.00 per metre. Les **VK3CX**, 03 5422 2860.

● **Yaesu FT-101E HF** txcvr, CW filter, 30 m band, \$250. 144 MHz 30 W linear amplifier, \$70. Ken **VK3DQW**, QTHR, 03 5251 2557.

FOR SALE OLD

● **Icom IC-751 HF** txcvr, plus Shure desktop mic, \$1100. **Icom PS-15 PSU**, \$200. **SP3** speaker, \$100. **AT-500** auto ATU, \$300. **Icom IC-25E 25 W 2 m** mobile FM txcvr, bracket, desktop mic, \$225. **DSE PSU**, \$75. Don **VK4AZA**, 07 5441 5454 (10-12 am).

● **Radio Shack DX-394** communications receiver, near new, hardly used, good performer with many features, \$210. Ron **VK4BL**, QTHR, 0418 233 372, vk4bl@tpgi.com.au.

● **Kenwood TS-140S** with **Kenwood PS-32 PSU**, \$1100. **THP HC500 HF ATU**, \$185. **Heathkit HD15** phone patch, \$150. **Turner Super Sidekick** base mic, \$110. **Shure 404C** hand microphone, new in box, \$100. **Drake MS-4** spkr, \$125. **ATN 8 el log periodic** antenna with balun, \$750. John **VK4SKY**, QTHR, 0417 410 503.

● **Coaxial connectors "N" female**, suit **LDF4-50**, new, \$50. Ditto to suit **LDF5-50**, \$75. **Collins 500 kHz crystal filter**, new, \$100. Ditto mechanical filter, \$100. **Marconi TF2300** modulation monitor, 5.5 - 1000 MHz, \$250. **100 ohm 80 W resistors**, true non-inductive with gold plated ends, \$25. **1000 pF 15 kVW 15 kVA** (virtually indestructible) plate blocking/bypass capacitors, new, boxed, \$50. **MRF421 RF** transistors, matched pairs, \$15 pair. **Mercury dashpot relay**, VERY heavy duty, compact size, \$50. **Roller inductor**, heavy duty, silver plated, new, \$50. John **VK4KK**, QTHR.

● **Kenwood TS-430S**, s/n 6050959, good condn, \$700. Alan **VK4IH**, 07 4685 2391.

● **Hills telescopic tower**, three section, extends to 70 ft, reasonable offers considered. Peter **VK4EB**, QTHR, 07 5546 6164.

● **Ameritron AL-811HX** linear amplifier, s/n 18021, 160-10 m incl WARC, 4 x 811A tubes, 800 W output, purchased new July '98, mint condn, suit new buyer. \$1350 ONO. Peter **VK4VW**, 07 5495 8724.

FOR SALE SA

● **Kenwood TS-520S**, \$190. **Yaesu FT7** and **FP4**, \$290. Marine communications equipment: **STC R 800 A**, **Eddystone EC 1680**, **AWA CTM-2K**, **AWA CTH-PSJ**, best offers. Harro **VK5HK**, QTHR, 08 8323 9622.

FOR SALE WA

● **Sigtec CTCSS encoders** (ex commercial), with

data sheet, \$15 each. **IDA Viking Series DTMF** microphones, with manual, \$35 each. Colin **VK6YHC**. 08 9399 2929 (AH), 014 885 348 (BH).

FOR SALE TAS

● **Kenwood TS-950SDX HF** txcvr, incl general coverage receiver, DSP built-in, one owner, hardly used, as new, boxes and manuals, what offers? **Kenwood DG5** digital readout, suit **TS-520S**, \$120. Allen **VK7AN**, 03 6327 1171, 0417 354 410.

● **Two HP 4952A protocol analysers RS232C/V24** pods, one V35 pod, 3.5" floppy capture, manuals, disks and cables, \$100 each. **Philips dual ISDN terminal adapter** multi, 2x analogue, 2x FD BRI channels, \$100. Justin **VK7ZTW**, QTHR, 03 6223 1351 (AH), e-mail justin@hmgjc.fam.aust.com.

WANTED NSW

● **Rockwell (Collins) 8054** receiver and any spares, connectors and documentation. Brian **VK2GCE**, 02 9545 2650.

● **FM92/900 U-Band** for conversion to 70 cm, also remote head. Ken **VK2KJ**, 02 9413 1846, 0412 003 517 anytime.

● **Nally tower**, 13.7 m crankup/tilt over. **Triband Yagi** 10-15-20 m, 3 or 4 element, lightweight preferably (portable use), and rotator to suit. Allan **VK2NNN**, 0417 441 892, e-mail ameredith@ozemail.com.au.

● **Big old receivers**, working or not, commercial or military, even junker or modified sets, parts welcome, the bigger the better, clean out the shack and give me a call, will collect in the Sydney area. John **L21068**, 02 9533 6261.

● **Pearce-Simpson Super Tomcat Mk II** circuit diagram and other relevant information. A **Amberly VK2BOG**, QTHR.

WANTED VIC

● **XF30C CW filter** for **Yaesu FT-101E** or **FT-101B**. Reg **VK3ARB**, 03 5794 2738.

● **SSR1 communications receiver workshop manual** or operation handbook with PCB layouts, will pay all costs. Barry **VK3AK**, 03 9363 5628.

WANTED OLD

● **Kenwood AT-130** antenna tuner. Barry **VK4BIK**, 07 5478 3087, e-mail BIK@bigpond.com.

● **Transceiver** to suit **FL-7000** amplifier, eg **FT-767CX**, or **FT-757GXII**, or **FT-747GX**, or **FT-1000MP**. Bernie **VK4BTF**, 071 416 8114.

WANTED SA

● **Information on disabling AGC** on **Kenwood TS-430S** for **AMTOR/PACTOR** use. Rob **VK5RG**, 08 8379 1889.

● **Publication "Hints and Kinks for the Yaesu FT200"**, copy costs gladly reimbursed. Geoff **Bridgland VK5NDZ**, QTHR, 08 8296 7496.

MISCELLANEOUS

● **The WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett **VK3TL**, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.

● If you got your licence before 1973 you are invited to join the **Radio Amateurs Old Timers Club**. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship.

Arthur Evans **VK3VQ** or Milton Crompton **VK3MN** can supply applications forms. Both are QTHR in any Call Book.

● Join the **Royal Signals Amateur Radio Society, Australian Chapter**, for details and application form see their Web Site at: www2.tpg.com.au/users/vk6pg/vk6sig/ or contact Ken **VK5AL** QTHR, or Alan **VK6PG** QTHR.


New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of September 1998:

L30929 MR D DEVENEY
L30977 MR A BRADBURY
L50733 MR G J CLIFFORD
L50734 AR EXPERIMENTERS GROUP

VK1XX MR G C DUNSTAN
VK2AR MR A BORYNSKI
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VK3JNH DR S WARRILLOW
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WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Secretary Treasurer	Hugh Blemings John Woolner Les Davey	VK1YYZ VK1ET VK1LD	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Secretary Treasurer Web: http://ozemail.com.au/~vk2wi/ e-mail address: vk2wi@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz	Michael Corbin Eric Fossey Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KUR	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Secretary Treasurer Web: http://www.tbsa.com.au/~wivac/	Jim Linton Barry Wilton Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail address: vk3wi@rint.com.au	VK3PC VK3XV VK3NC	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 3221 9377	President Secretary Treasurer Web: http://www.wiaq.powerup.com.au	Colin Gladstone Peter Harding Alistair Erick e-mail: secretary@wiaq.powerup.com.au	VK4ACG VK4JPH VK4FTL	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Assistant Secretary Treasurer Web: http://www.vk5wia.ampr.org/	Ian Hunt Graham Wiseman Joe Burford	VK5QX VK5EU VK5UJ	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	Acting President Secretary Treasurer Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	Cliff Bastin Christine Bastin Bruce Hedland-Thomas	VK6LZ VK6ZLZ VK6OO	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division 24 Targett Street Scamander TAS 7250 Phone 03 6372 5305	President Secretary Treasurer Web: http://www.wia.tasnet.net e-mail: vk7kpg@hamnet.hotnet.com.au	Ron Churcher Paul Godden John Klop	VK7RN VK7KPG VK7KCC	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				

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December 1998

Volume 66 No 12

Journal of the Wireless Institute of Australia



IN THIS ISSUE:

- Easy CW
- Some Practical Tips on Timber Radio Masts
- Work 'em First, Worry Later
- A Sensitive HF Indicating Wavemeter

Plus

lots of amateur radio news, information, articles, and special interest columns.

QMS - 7

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Cover Iain Morrison VK4IGM with Scouts Rebecca Pike, 12, and Daniel Adams, 14, operating in the 41st Jamboree-on-the-Air from the Bluewater Scouts Site 30 km north from Townsville (see *Over to You* letter on page 50).

[Photo by Scott Radford-Chisholm - reproduced with permission from the Townsville Bulletin.]

CONTRIBUTIONS TO AMATEUR RADIO

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk or via e-mail are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. A pamphlet, "How to Write for Amateur Radio", is available from the WIA Federal Office on receipt of a stamped, self addressed envelope.

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Available direct from the WIA Federal Office, only until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

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When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus \$2.00 for each additional issue in which the article appears).

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Viewpoint

Editor's Comment

End of An Era

This issue of *Amateur Radio* is the last to be produced by Bill Roper VK3BR. The WIA executive has decided to accept a lower tender for production of the January 1999 issue and thereafter.

I would like to make known to you all, at this stage, the part that Bill Roper has played in the very long time he has been associated with this magazine. He joined the Publications Committee in 1963. In 1972 the WIA Divisions agreed to set up a Federal Body to do for the Divisions as a whole all those things which few could fairly be expected to do individually. Two of these things were, and still are, to represent the interests of amateur radio to the Federal Government, and to publish the magazine *Amateur Radio* which, until then, had been published by the Victorian Division, on behalf of all Divisions.

The first Editor of the magazine at this time (1972) was Bill Roper, then VK3ARZ. Bill remained Editor until 1976, when he retired from the position due to pressure of work in his full-time job. One of his first actions in 1972 was to appoint me (VK3ABP) to the newly created position of Technical Editor, from which I moved to Editor in 1984. Between 1976 and 1984 the Editors were Bruce Bathols VK3UV (1977 to March 1983) and Gil Sones VK3AUI (March 1983 to May 1984).

Bill Roper came back into full-time service to the WIA in May 1988 and was formally appointed as Federal Office General Manager and Secretary in January 1989. This then rendered him effectively the publisher of *Amateur Radio* and he was so designated in June 1992.

He resigned from the managerial position in August 1993 after completing over five years in the job. During this time he extensively modernised and updated the office management systems and, because of the increased efficiency, was able to improve greatly the financial position of the WIA.

Following this, from August 1993 to December 1996 Bill was employed by and in the Federal Office in the capacity of Production Editor. In 1996 Council moved to outsource magazine production fully. Bill decided to become a contractor, so he set up vk3br Communications Pty Ltd (more recently W Roper and Associates) in December 1996.

With the May 1998 issue he extended his capability still further to take on the computer typesetting of *Amateur Radio*. He had been responsible for computer-aided drafting of drawings since August 1995. Each of these changes brought further efficiencies and economies in producing the magazine, but our steadily falling membership reduced our subscription income still more.

Without Bill Roper I think the WIA will be poorer, even though, due to potential conflict of interest, he has not been a member since 1989.

We wish him good luck in his future activities.

May we all enjoy a Merry Christmas.

Bill Rice VK3ABP
Editor

ar

■ WIA Comment

From the President

This month the WIA's Liaison Committee will be meeting with the ACA in Canberra to discuss and, hopefully, resolve a number of important strategic matters.

Following my request to Federal Council I have been given an up-date on those issues which appear to be of maximum concern to you, the Australian Radio Amateur. It is a wide ranging list of matters covering every aspect of our hobby.

The atmosphere in which the WIA and the ACA will be discussing these matters appears to be very constructive with both sides keen to make significant progress. It is proposed to maintain the momentum now being established by scheduling

meetings between the WIA and the ACA at predetermined dates each year. In this way, both parties will be able to prepare for the discussions and thereby make the meetings more productive. I will bring you a progress report early in the New Year.

On the international scene, the WIA is representing the Australian Amateur via its membership of the IARU. The next two years are very important with a number of issues on the agenda which relate to proposed review of Amateur Radio operations by the ITU. Some of these could result in far-reaching changes to our hobby. Without the voice provided by the WIA we would be in danger of being left behind.

As we come to the end of another year, I would like to thank, on behalf of the Federal Council and the Federal Directors, all those many hard working volunteers who make the WIA so successful. To the co-ordinators who operate our specialist areas in such a dedicated manner, and who often give up much of the free time for your benefit, we are especially grateful.

Also, we must not forget our regular contributors to this Journal and all those others who make *Amateur Radio* such an excellent publication. Thank you for a job well done!

Finally, to all our readers, I hope you can enjoy a break over the Christmas and New Year period and find time, and good conditions on the bands of your choice, for some traditional Amateur Radio operating. Thank you for your support of the WIA and I look forward with you to making our hobby even better in 1999.

A Happy Christmas and a Healthy New Year to you all.

Peter Naish VK2BPN
WIA Federal President

ar

■ News

WIA News

Prepared, researched and compiled by
David Thompson VK2NH
Federal Public Relations Co-ordinator

New Production House for Amateur Radio

Peter Naish VK2BPN, WIA Federal President, has announced that *Amateur Radio* will be produced in 1999 by Newsletters Unlimited of Melbourne. This decision followed advertising, an intensive analysis of the tenders received, and discussions with a short list of four.

Peter Naish paid tribute to the work of the outgoing contractor. vk3br Communications Pty Ltd had taken over the production of *Amateur Radio* when the decision was made to move it away from the Federal Office. Bill Roper had made a number of changes over the years and had set the standards for WIA publications.

The new arrangements will result in

considerable savings to the WIA with no loss of quality or change from the currently monthly cycle. Some new features will be added to *Amateur Radio*.

Newsletters Unlimited has a distinguished track record in the production of printed materials since the proprietors Gill and John Nieman first started as owner publishers of a weekly newspaper in country Victoria and continues in producing a variety of newsletters and monthly periodicals for a number of national organisations.

Accompanying the choice of Newsletters Unlimited is the appointment of Bob Harper VK4KNH, trading as Shadetree Publishing, to assist the current Editor, Bill Rice, in the production of the magazine. Bob will be well known to

Queensland members as a former member of the Council of WIAQ and Editor of QTC.

The January 1999 issue may be delayed slightly as a result of the changeover.

Contributors to *Amateur Radio* should send their material (preferably by e-mail or on floppy disc) to the Federal Office which will ensure it is passed to the Editor.

Special AX Calls Available

Federal President Peter Naish VK2BPN says he is pleased to announce that, "the ACA has approved use of the AX prefix by all Australian amateurs on Australia Day, 1999. The period stated for use is from 0000 hours to 2400 hours local time, in each state or territory."

David Wardlaw VK3ADW for Vice President of the IARU

The Administrative Council of the International Amateur Radio Union (IARU) met in Porlamar, Venezuela, in

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THE LAST EVENT FOR THE YEAR

If you live in Perth, or are heading that way in early December, make the following note in your diary:

Tower Icom Day (WA) Saturday 5 December

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October, 1998. The meeting was held immediately after the IARU Region 2 Conference.

After completion of consultation between the Council and President Rod Stafford W6ROD, of the American Radio Relay League which serves as the IARU International Secretariat, the Council received the nominations of Larry E Price W4RA for the office of IARU President and David A Wardlaw VK3ADW for the office of Vice President for five-year terms beginning 9 May 1999.

The Council then unanimously recommended that the nominations be ratified by the member-societies. Mr M Owen VK3KI announced that he declined nomination for another term.

Changes Planned for the 10 GHz Band in the UK in 1999

The Radiocommunications Agency has announced that the 10 GHz band allocation is to change from 1 February next year. The Agency points out that, while part of the band will be withdrawn, there is to be an overall increase in the allocation of spectrum to radio amateurs.

The current frequency allocation is from 10.00 to 10.15 GHz and from 10.30 to 10.50 GHz for the terrestrial service; and from 10.45 to 10.50 GHz for the amateur satellite service.

From 1 February 1999, the allocation will be from 10.00 to 10.125 GHz and from 10.225 to 10.475 GHz for the terrestrial service. The amateur satellite allocation will remain unchanged. The RA states that, given the ever increasing demands on spectrum, it will *"continue to balance the need for radio amateurs to have access to this spectrum with the demands of new and existing radio services"*.

Temporary Operating Conditions in France Relaxed

If you are travelling to France, then it is good news that visiting hams to that country, who stay less than 90 days, are no longer required to have a temporary operating permit. Also, there is no longer any charge for an extended operating permit.

[Via Newline and Q news]

Satellite on the Blink!

A new amateur radio satellite, SedSat-1, which was launched on 24 October was, as of early November, suffering from power problems.

Meanwhile, another amateur radio satellite, PanSat, was launched from the space shuttle a couple of weeks ago. PanSat is a store-and-forward digital microsat and is in a low inclination orbit. [Via AMSAT-UK]

ARLB087 FCC issues Universal Licensing System rules

The FCC has issued its long-awaited Report and Order on the Universal Licensing System, which affects all USA Wireless Telecommunications Bureau licensees.

Among other things, as part of its Report and Order on the ULS, the FCC also issued amended rules to authorise visiting foreign hams to operate in the US pursuant to recent international reciprocal operating agreements. *"We conclude that all alien amateur radio reciprocal operation should be authorised by rule,"* the FCC said.

CEPT Licence Holder Privileges in US

Hams foreign to the USA, and holding a CEPT radio-amateur license from a CEPT country or an International Amateur Radio Permit issued by a participating CITEL country, may operate while visiting the US without having to apply for permission.

The European Conference of Postal and Telecommunications Administrations (CEPT) is an organisation of regulators.

Under its terms of reference, it is required to consider, in a European context, public policy and regulatory matters relating to posts and telecommunications and to foster the harmonisation of regulations.

The members of CEPT are the postal and telecommunications administrations which, at national level, are competent in these fields.

Finland was the Managing Administration of CEPT for three years until October 1998. Norway is the Managing Administration of CEPT as of 1 October 1998.

CEPT Meets to Consider Strategy

The Plenary Assembly of the European Conference of Postal and Telecommunications Administrations has met in Finland. Delegates from 31 European Countries participated in this session. The European Commission and the Universal Postal Union were also represented.

On 1 October 1995, Finland took over the management of CEPT for a period of three years. The CEPT Liaison Office in Berne was closed at the end of 1995 according to decisions made at the previous Plenary Assembly in 1995.

The Plenary Assembly discussed the role of the CEPT in the rapidly developing field of posts and telecommunications in Europe. Also some organisational and structural issues were covered.

European preparations for the Congress on the Universal Postal Union (UPU), Beijing, 1999, are under way in the European Committee for Postal Regulation (CERP). A Joint Working Group of the ECTRA and the ERC has been responsible for the European co-ordination at the Plenipotentiary Conferences of the International Telecommunication Union (ITU). Preparation for the ITU Plenipotentiary Conference, which will be held in Minneapolis (USA) from 12 October to 6 November 1998 are being finalised. Agreement has been reached on European common proposals to this Conference.

With a joint statement by European Commission (DG XIII) and the CEPT concerning the relations with the telecommunications and postal administrations of Central and East European countries the Plenary Assembly abolished the Group for Assistance and Advice to the countries of Central and Eastern Europe (ACECO) set up in 1992. The work of the ACECO Group continues within the scope of the TACIS and PHARE programs of the European Union.

Experimental Radio Rules Revised in the United States

The FCC has revised its Experimental Radio Service rules to encourage what it calls more experimentation and technological development. The FCC

says it did the rewrite in order to eliminate unnecessary and burdensome experimental regulations and protect public safety frequencies.

The streamlined rules make it easier for applicants to obtain licenses tailored to their particular needs. They also allow schools to hold experimental licenses in the same way that individual students may do so now.

The new regulations are also designed to ensure that experimental licenses do not result in abuse of FCC processes.

And the FCC has also announced that the 1999 maximum Amateur Radio volunteer examination reimbursement fee will be \$6.49. This is based on a 1.5% increase in the Consumer Price Index between September 1997 and September 1998.

[Via FCC and Amateur Radio Newslines]

Australia Makes the International News

The Radio Society of Great Britain GB2RS news broadcast has carried the story about the controversy

surrounding the use of 70 cm during the time of the Year 2000 Olympic and Paralympic Games. The use of 70 cm by other interests is watched by most amateur radio people all over the world with great interest.

Antenna Safety for Hams

Andrew Funk KB7UV, the Assistant News Operations Manager for WAGA Fox-5 television in Atlanta, Georgia, has some new material at his Electronic News Gathering Safety Site on the World Wide Web.

While aimed primarily toward engineers who operate microwave remote trucks, much of the information is also applicable to ham radio antenna safety as well.

Funk says that the Website now includes material suggested by Dan Nungesser who is the Chief Engineer of WSEE Television. The ENG Safety material can be found at: <http://fox5atlanta.com/ENG/>
[Via KB7UV and Newslines]

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- To the ACA
- On the Radio Communications Consultative Committee



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Amateur Radio is different for everyone. Your method of communications could be CW, SSB, RTTY, AM, AMTOR, packet, SSTV, ATV, etc. I would guess that 75% are on voice, 20% on telegraphy and the other 5% for the rest. Looking on the technical side there is equipment construction, antenna developments, microwave experiments and just two-way communications using commercial appliances. I think the last item would probably be 80% of amateurs today.

Reading CW

So you may have wondered what those guys on 7025 or 14025 kHz are talking about. You've got a computer, but the TNC won't translate Morse code as your TNC is strictly for packet. No problem. If you have just a little knowledge of the basics of electronics and can use a soldering iron, you will enjoy this project which will help you decode CW.

I searched through the magazines and handbooks for a simple tone decoder. Nothing seemed simple until VK2TT suggested using the LM567 barefoot.

A search through the junk box produced all the pieces except the 567 which cost me \$2.40. The circuit is shown in Fig 1. The values shown for resistors and capacitors were determined empirically.

The values selected should give adequate coverage for your favourite audio beat note. You will not need fancy DSP filters as the decoder itself has a very narrow band width and can often beat the QRM although it does have a problem with the summer QRM storm static (it will print "Es").

Construction

My first effort was built on a 1" x 2" (25 x 50 mm) piece of vero-board. For the 5 V supply I used a 4 AA pack which actually produces 5.5 V.

The wiring took me about three hours,

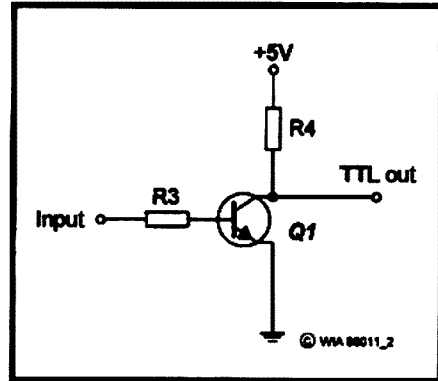


Fig 2 - Schematic of the mark-space inverter.

Parts list:

Q1	NPN general purpose transistor
R3	10 k
R4	10 k

but you'll do it a lot faster. When everything is wired up, check it, then check it again!

Using

First connect the audio to the audio output of your receiver. Connect a small ear-piece so that you can check the oscillator is working. Also, just so that you can understand what is happening, connect a volt meter across the output. Apply your favourite tone. This could be the internal sidetone from your transceiver. Watch the voltmeter. It should suddenly read 0 V, better known as "mark low". Tune RV1 until you get this "low" reading. Now key the transmitter with VOX, etc all off so that you don't cause unnecessary QRM.

So it works. The voltmeter follows your keying. Trevor VK2TT uses this to key his 1895 sounder system which then transmits whatever it hears on the land-line clacker. If you've never heard an old telegraphy clacker going then you've missed something in life.

Computer Programme

Next you need a program for the computer. I had a bunch to choose from and selected a Morse Code program by K2BJG. Unfortunately, it required a mark "high", so an additional interface was required in the form of an NPN transistor (see Fig 2).

It also required the signal on the CTS pin of the serial port. At first I had problems because the program was only written for COM 1 and COM 2. COM 1 on my machine is dedicated to the Mouse
(continued on page 36)

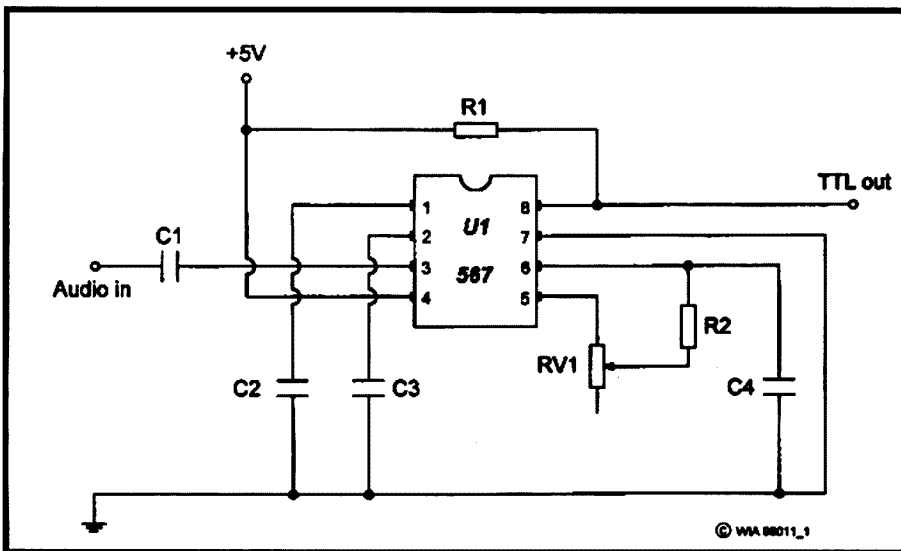


Fig 1 - Schematic of the tone decoder.

Parts list:	C3	0.047 uF	R2	6.8 k	
C1	0.1 uF	C4	0.1 uF	RV1	10 k
C2	1.0 uF	R1	1 k	U1	LM567

■ Antennas

Some Practical Tips on Timber Radio Masts

Drew Diamond VK3XU
45 Gatters Road
Wonga Park VIC 3115

Whilst working on my fifth radio antenna mast, in as many locations, I took my camera and snapped a few things that, it is hoped, will be of interest to many radio amateurs.

My choice of material this time was timber, although a telescopic pipe TV-style mast was also considered. However,

a metal mast has at least two electrical disadvantages.

First of all, being in the near radiation field of the antenna, there may be some distortion of the intended radiation pattern.

Secondly, any poor connections in the mast or fittings may show up on the signal as intermittent noise, or worse, cause

what is known as “rusty-bolt” type harmonic radiation.

Traditionally, the best and strongest timber for radio masts is said to be clear-grained Oregon (Douglas Fir). “Clear-grained” means a close grain that runs the entire length without significant running out to either side, and is completely free of knots, gum veins and cracks. Now, you may be in the timber business, and know where to get some of this rare commodity, but I suspect that all the good stuff is siphoned off (perhaps by the ladder and yacht-mast makers) well before it reaches the ordinary timber merchants.

Anyway, I spent days going around all the local suppliers in my quest for some nice “sticks”. I could not find anything remotely suitable. Everything I saw had a coarse wobbly grain, knot holes galore, and splits that you could drive a truck through.

All the time I was looking, right under my nose at every yard was the very thing, “Tasmanian Oak”, a trendy name for

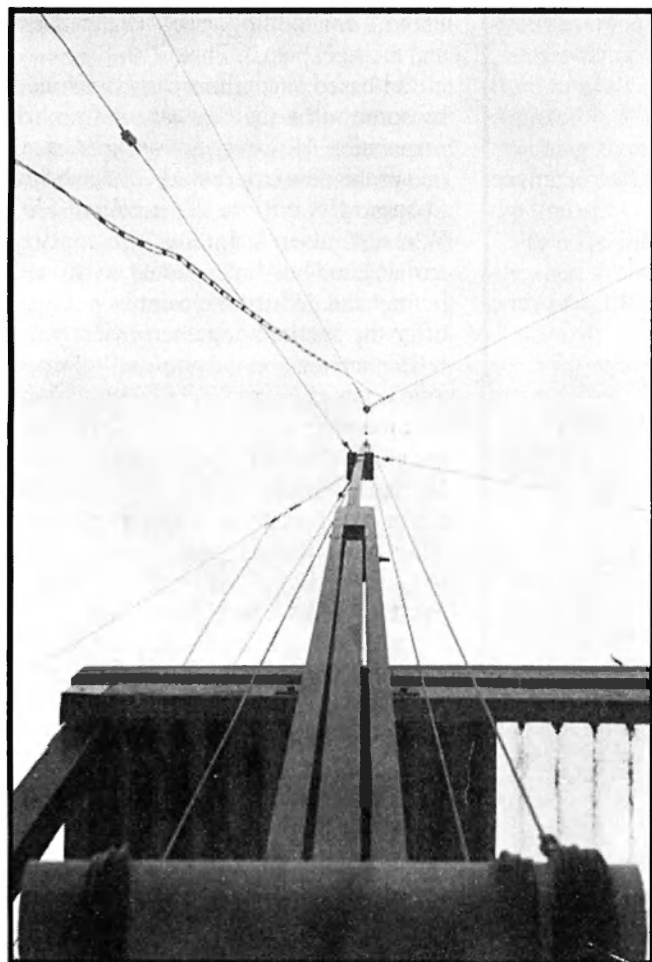


Photo 1 - The timber mast with “sky wires”.

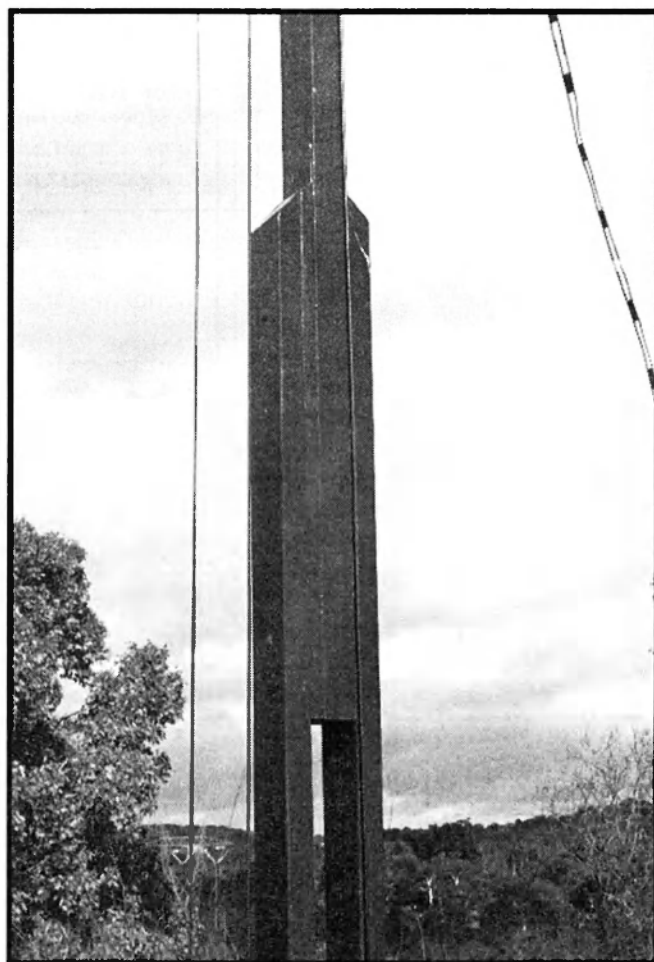


Photo 2 - The Join. Note the sloping shoulders.

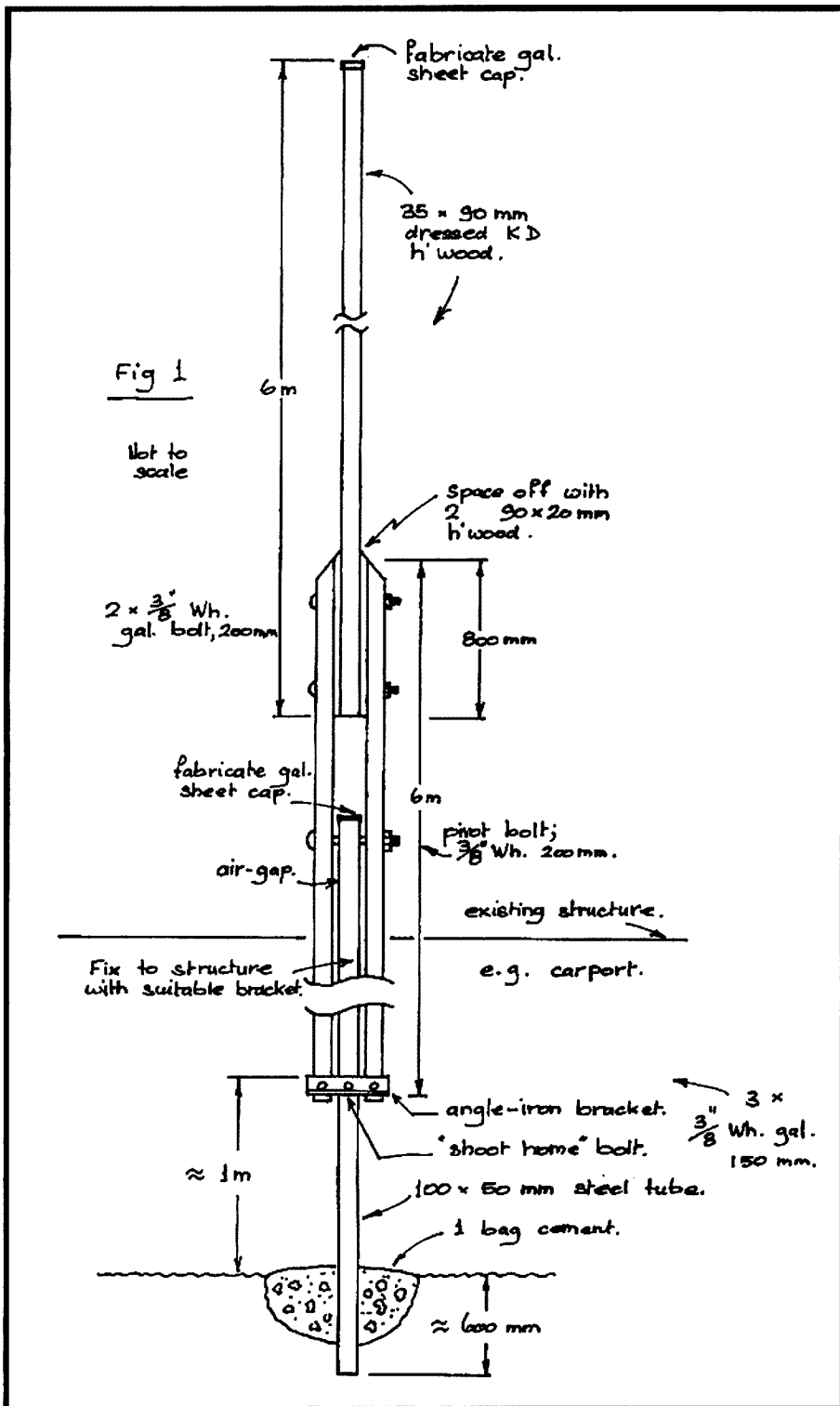


Fig 1 - An easily erected timber radio mast.

what I think is actually Mountain Ash, Messmate or Stringybark, also known as kiln-dried (KD) hardwood.

Three dressed, clear-grained 35 x 90 mm x 6m lengths were duly selected. Although heavier than Oregon, this material has an F16 rating which, for the

price, makes it one of the strongest available.

To support ordinary wire antennas, a popular and easily erected mast type is shown in my example in Fig. 1 and Photo 1 (if you do decide to build a mast, any necessary approval from your spouse,

neighbour(s), landlord, local council, etc is assumed in what follows).

The lower section is comprised of two equal lengths of 35 x 90 mm hardwood, and the upper section is a single length of the same material. Overlap at the joint is about 800 mm. The pivot point is dictated by the height of the supporting structure.

In my case, the carport height is 3 m, so the pivot is about 4 m above ground. The base is a 5 m length of 100 x 50 mm steel tube fitted into the ground as shown.

You and I know that water will always try to get in (or out). If not allowed to dry in a reasonable time, it will cause rot in timber, and corrosion in steel. Australian hardwood is rather more rot resistant than most soft timbers (pine for instance, which should be avoided in this application). For long life, timber and steel must be adequately protected from ingress of moisture. The weak points in timber exposed to water are the joints, horizontal surfaces, and particularly the end-grain. To obtain quick drying after rain, note the 45-degree sloping shoulders at the joint in Photo 2, and the air-gap between the mast and the steel post in Photo 1.

Oil-based pink primer is still reckoned by some to be the best external timber preparation. However, in my experience, one of the new exterior acrylics, such as Solargard™ will do an excellent job. Where timber is joined, the mating surfaces and bolt holes should be painted beforehand. Whilst the paint is still wet, offer the sections together, insert your bolts, then tension the nuts until you see little beads of paint evenly squeezed from all around the joint. Immediately paint over the joints using a little extra paint. Have a competent helper on hand, and make sure you have all necessary components and tools at the ready. Three or four saw horses may be used to support the job evenly during assembly.

Drill all holes for halyard eye-bolts, pivot bolt and lower bracket bolts, then give the mast two or three coats of paint. Apply plenty of paint to the eye-bolts as they are inserted, then paint around the holes so that moisture cannot enter, then tension the nuts and paint again. The same goes for any other bolts used later in the job.

The top of the mast must have a snug galvanized sheet metal cap fitted. It should be at least 20 gauge with the corners

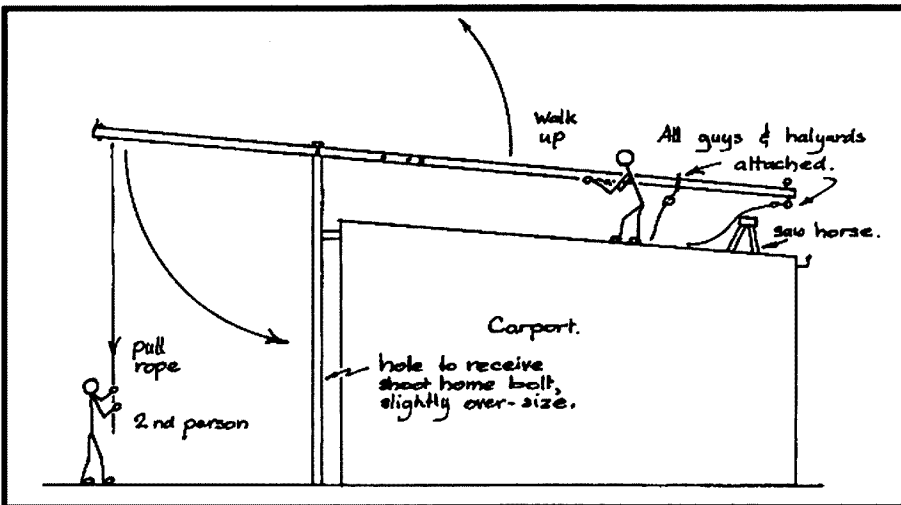


Fig 2 - A way of raising the timber radio mast.

soldered to prevent cockatoos (bitter experience) from prising it off (see Photo 3).

Also shown is a method of attaching halyard pulleys to the eye bolts. The pulleys should ideally be stainless steel marine types. A very durable halyard material is green PVC-covered steel clothes-line wire.

The wind-resisting strength of the mast derives from one set of three guys, spaced at 120 degrees, which are attached at about the 80 percentage height point. My use of stranded galvanised wire for the guys is sentimental rather than being based on modern materials. ATN Antennas can supply Kevlar rope for guying

applications, which is probably a better approach if starting from scratch. However, stranded galvanised "clothes-line" wire is normally available from rural suppliers.

To avoid unwanted resonance problems, metallic guys should be broken up, about every 3 m, with glazed egg-type electric-fence insulators, also available from rural suppliers. The guying bracket depicted in Photo 4 shows one way of attaching the guys to the mast without having to drill a hole in (and thus weaken) the timber.

Two 150 mm lengths of angle-iron are clamped to the mast, sandwich fashion, with two 3/8th inch Whitworth 50 mm

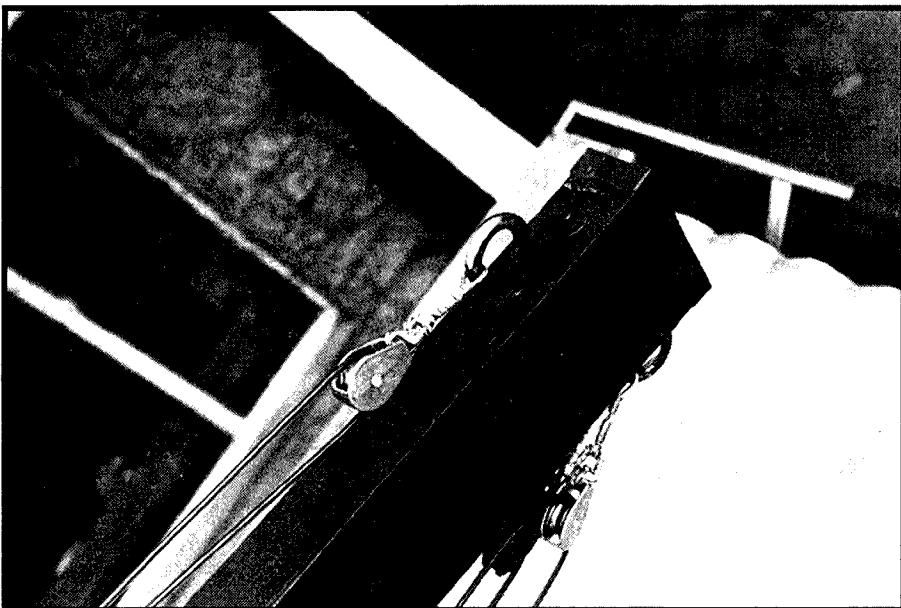


Photo 3 - Eye bolts and pulleys.

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long galvanised bolts (sorry about the mixed measurements - generally, nuts and bolts sold in hardware shops are Imperial measurement. By the way, you may have to go to a rural supplier to buy genuine galvanised hardware). These brackets must be pre-painted with a metal primer such as Kill-Rust™, then painted again with your mast paint. Note the use of galvanised thimbles where the guy wires pass through the bracket holes.

Some steel merchants have galvanised tube which needs no painting. But the common blue- or brown-painted material must be metal-primed and top-coated before it is placed into the ground. The life of the tube will be considerably increased if the hole is topped with concrete, about one bag, to just above ground level as shown in Fig 1 and Photo 5. Note how the paint has been extended from the steel tube down onto the concrete to form a water-tight seal. Fabricate a snug cap for the steel post similar to the top cap.

Select, or provide, suitable tie-off points for the three guys, at about 120 degrees, and spaced at least 4 m out from the base of the mast.

If no suitable existing structures are available on or in your property, sink a treated pine or red-gum post (such as a railway sleeper) at appropriate point(s) as required. To avoid scalping and tripping accidents, the guy tie-off point must be above head height. If, for some reason, the guy must pass where persons may walk into it, run the guy through some white conduit tube *a la* the power company method.

Fig 2 shows a way of raising the mast. Choose a still day for the job. Make absolutely sure that the pivot bolt hole and "shoot home" bolt hole in the steel base and mast lower section match each other exactly.

Your shoot home bolt should have a point ground on the threaded end to aid in alignment.

The mast is first placed on the (carport) roof next to the steel base, then raised by two persons so that the pivot bolt may be inserted. The nut is spun on, but not tensioned. Have all guys and halyards laid upon the roof so that they will not tangle.

The second person, now at ground level, must have the shoot bolt and nut to hand, and perhaps a hammer as well.

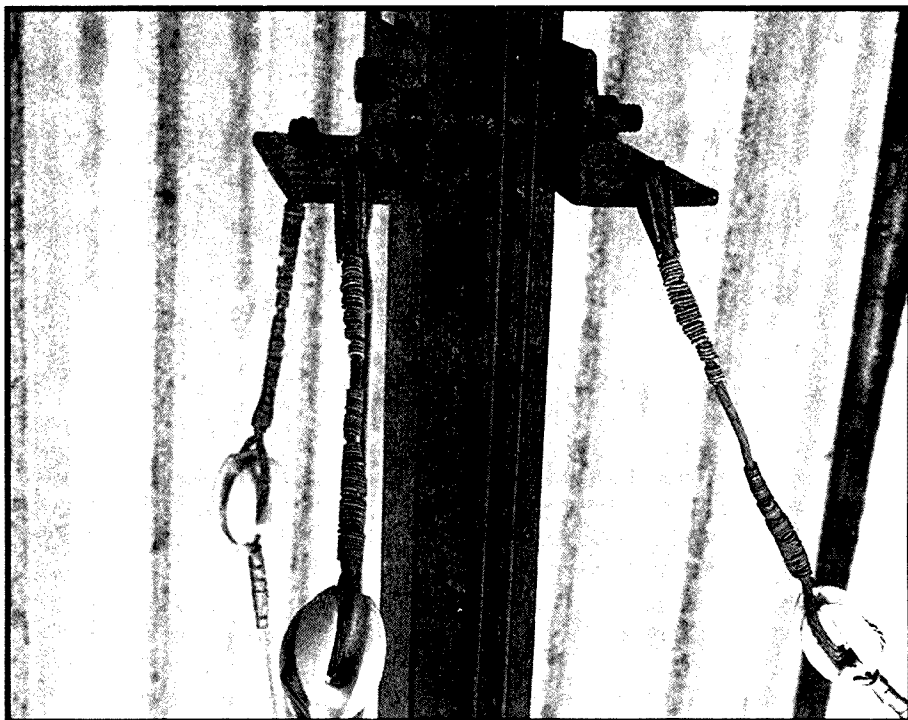


Photo 4 - Guy wire bracket.



Photo 5 - Base of the steel post.

Whilst the person on the ground pulls on the rope, the mast may be easily "walked up" to vertical.

Remove the rope and insert the shoot bolt (perhaps with the aid of a hammer, but using no great force - if it won't go home, find out why). Tension the shoot and pivot nuts. Tie off the three guy wires, straining evenly so that the mast remains vertical. Now run up your favourite sky wires.

References and Further Reading

1. *Practical Wire Antennas*, J Heys; RSGB Publications.
2. *Radio Communication Handbook*, 6th Edition; RSGB.
3. *Australian Carpenter Metricated*, C Lloyd; Published by Macmillan.

■ Test Equipment

A Sensitive HF Indicating Wavemeter

Drew Diamond VK3XU
45 Gatters Road
Wonga Park VIC 3115

Early radio workers generally talked about “wavelength” rather than frequency. To this day, many of us still use terms like “the 10-metre band”, but everyone knows we mean the 28 MHz band.

Just why the metre-band nomenclature persists is a bit of a mystery. Anyway, a device which measures radio frequency by the resonance method is still called a “wavemeter”.

Generally, an absorption wavemeter is simply an adjustable LC tank (or cavity) which is coupled to an energised circuit. Resonance is indicated by some means external to the wavemeter, such as a flick in the plate current of a power amplifier, or a dither in the frequency of an oscillator, or a dip in terminated power level in microwave work, and so on, as the wavemeter’s variable is swept through the appropriate range.

An indicating wavemeter has a detector built-in. Where substantial power levels are used, the indicating device may be a pea-lamp, for instance.

Early high-class wavemeters used a thermocouple meter. When point-contact diodes became available, they were quickly applied as rather sensitive detectors, and were much better than any previous passive device.

In the past decade or so, wavemeters (of both types) have become rather unfashionable, perhaps because of their perceived lack of sensitivity and accuracy. Indeed, for the past few years, the mainstream radio handbooks have only carried details of VHF and UHF wavemeters, and have allowed the HF meter to fall into obscurity.

This is a pity because, when properly applied, the wavemeter represents the

purest form of spectrum analyser, and has many applications in contemporary radio work.

Here are details of a sensitive indicating wavemeter with a frequency range from 1.7 to 55 MHz. Sensitivity is such that a nominal one milliwatt output (applied to a small three-turn coil) from an HF signal source is easily detected. My oscillating dipper can be sniffed at about 100 mm coil spacing.

The meter may find application, for instance, in checking that an oscillator is working (and indicate its approximate frequency); that a multiplier tank is tuned to the correct harmonic (and also indicate the relative amplitude of any unwanted frequencies there); that an amplifier stage is working; and for the presence and relative amplitude of spurs, parasites or harmonics on your radiated signal.

Furthermore, the wavemeter may be used for field-strength work, either as a simple sniffer, or by coupling a small antenna to the wavemeter’s coil. An optional headphone output also allows us to listen for any modulation on the signal.

Circuit

Three plug-in coils cover the range from 1.7 to 55 MHz as follows: Range A (L1) from 1.7 to 4.1, Range B (L2) from 4.1 to 16, and Range C (L3) from 16 to about 55 or 56 MHz (depending on strays).

When the wavemeter’s coil is coupled to the field of the energised circuit, then brought to resonance by manually adjusting the variable capacitor, the RF voltage thus obtained will be at maximum. The dual diode detector, connected by the 1.5 pF capacitor, will establish a proportional DC voltage across the one megohm sensitivity pot, where the slider is adjusted to present a user-controlled value to the meter amplifier.

A common LM-386 is wired here as a DC, or servo amplifier. Circuitry inside the LM-386 sets the gain, and establishes the quiescent (no-signal) DC output at pin 5 to half the supply voltage, in this instance +4.5 V. A voltage divider comprising a 3.3 k resistor from +9 V, a 500 ohm trim pot and another 3.3 k

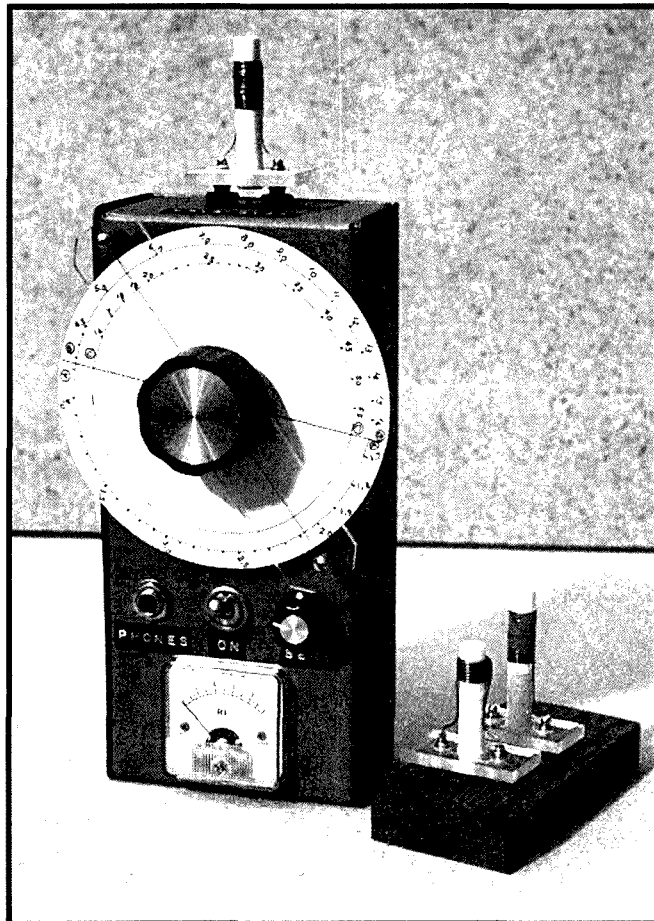


Photo 1 - The wavemeter and coil set.

resistor to chassis, produces a voltage of about +4.5 V at the slider of the trim pot.

The 1 mA meter is connected in what is virtually a bridge arrangement. Now, the relatively small positive DC detected signal voltage applied to the (+) input of the LM-386 is amplified, causing the DC output at pin 5 to move in a more positive direction, thus unbalancing the bridge and proportionately driving the meter. A small-signal silicon diode is connected at the amplifier input to prevent strong (within reason) signals from damaging the amplifier.

A connector for high or low impedance headphones allows the user to "listen" to the signal. Current drawn from the 9 V "transistor" battery is about 5 mA.

Construction

The instrument is housed in a home-made aluminium box measuring 90 x 190 x 50 mm. Yours may be smaller if desired, but note that the dial should be reasonably

large to provide good resolution. Use is made of the tag arrangement on the variable capacitor, where each section (or gang) has a tag at each side.

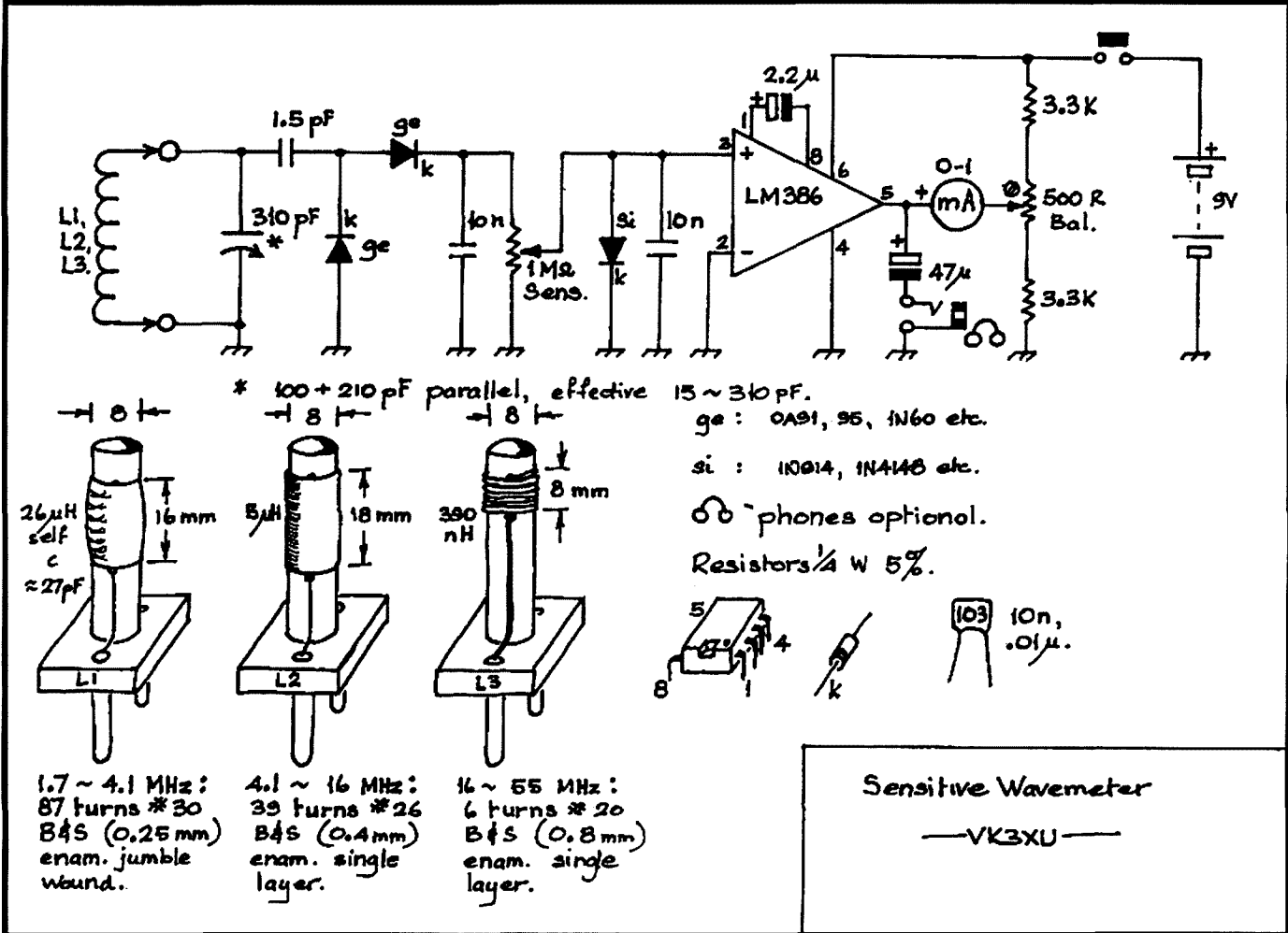
To keep stray capacitance and inductance to a minimum (which would reduce frequency range, especially at the high end), the capacitor should be mounted with tags pointing upwards and downwards as shown in Photo 2. The 100 and 210 pF gangs are wired in parallel (there is some discrepancy as to the actual value of the gangs in these new surplus capacitors - my Marconi bridge measures them as stated, but some suppliers give them a different value - nevertheless, if the specified capacitor is used, there should be no problem). Remove the screws and prise off any trim capacitors if fitted.

A rectangle of plain printed circuit board is mounted adjacent to the variable capacitor's lower tags. The LM-386 and associated components are mounted

upon substrates "paddyboard" fashion (see Reference 1). Any other preferred wiring method should be satisfactory, but component connections should be reasonably short, especially those of the 1.5 pF capacitor, the detector diodes and the 10 nF capacitors. Use long-nose pliers as a heat-sink when soldering these parts.

The coils, depicted in the schematic drawing, are wound upon the outer barrels of Biro™ ball-point pens, which are 8 mm diameter. One pen provides sufficient material for three coil formers. Any two-pin plug and socket type that you prefer should be satisfactory. Those shown are ordinary banana types from Dick Smith Electronics.

The plugs may be threaded or glued into Perspex (or similar low loss) material. Use super glue to cement the coil form into a 8 mm hole drilled centrally in the Perspex base. You will find it easier to wind the coils onto the formers beforehand. The number of turns



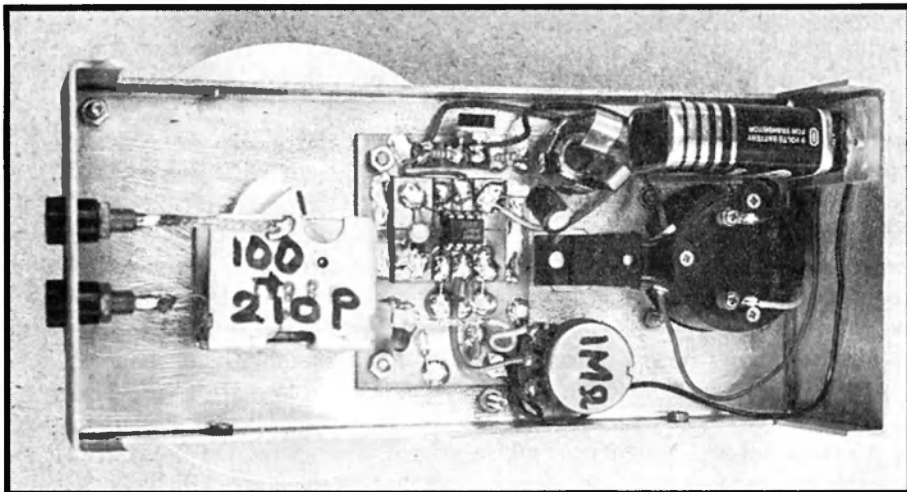


Photo 2 - An internal view of the wavemeter.

specified refers to whole turns, so don't be too concerned about those half turns which go through the 1 mm holes.

Wind the coils by mounting your spool of wire in a vice, stretch out a few metres of wire, then walk towards the spool, maintaining tension on the wire at all times. Carefully poke the wire end through the second 1 mm hole whilst gripping the coil between forefinger and thumb, otherwise the winding will spring off. So that the Perspex is not melted, it would be prudent to pre-tin the banana plugs before they are fitted into their bases.

The aluminium disc dial shown has a diameter of 110 mm, and is painted with two coats of flat white undercoat auto spray. Compass two concentric circles preparatory to calibration. The fixed cursor is made from a length of the same Perspex as used for the coil bases. The cursor line was produced with a sharp scribe, then filled with black crayon and polished off. The cursor may be fixed to the case (as shown), with the dial disc attached to a home-made flange on the cap spindle, which rotates beneath the cursor; or the disc may be fixed to the case with the cursor attached to the back of the knob (probably easier, because no flange is required).

Calibration

Check your wiring and component placing, then switch on. Adjust the 500 ohm balance trim pot for zero deflection on the meter. Rotate the sensitivity pot through its range and see that the meter does not deflect off zero by any sig-

nificant amount (it may move about one-tenth of a minor division).

You will need a signal generator, dip oscillator, or similar calibrated signal source. For a signal generator, set the frequency to 1.7 MHz at maximum output (at least 1 mW or 0 dBm). Install a small three-turn coil into the signal generator output. Plug in wavemeter coil L1 and position it about 10 mm away from the three-turn coil, then peak the variable capacitor for maximum deflection whilst adjusting the sensitivity pot for an on-scale deflection of the meter.

Check similarly at 4.1 MHz. Leave the signal generator there and insert L2. You should find that a small overlap exists, in that 4.1 MHz is again picked up at the low end (max C) of L2. Tune the signal generator to 16 MHz, which should peak near the top end (min C). Leave the signal generator there and insert L3, which should tune at the low end. Set the signal generator to 55 or 56 MHz, which

should be found at the top end of L3's range.

With the ranges thus confirmed, dope the coils then go back and calibrate each dial scale range.

A dummy cursor with holes through which your pen or pencil may be inserted will be found useful as a calibration aid. My dial scale is shown here as a guide only - it should not be relied upon to match individual coil/capacitor combinations.

However, your calibrations should work out similarly. Remove the disc and apply a coat of clear lacquer to protect the markings.

If using a dip oscillator as a signal source, couple each wavemeter coil to the dipper's coil spaced initially about 50 mm end to end. Adjust the dipper and wavemeter in a manner similar to that described above.

Operation

After calibrating the instrument, you will probably already have a "feel" for the sensitivity and possibilities of the device.

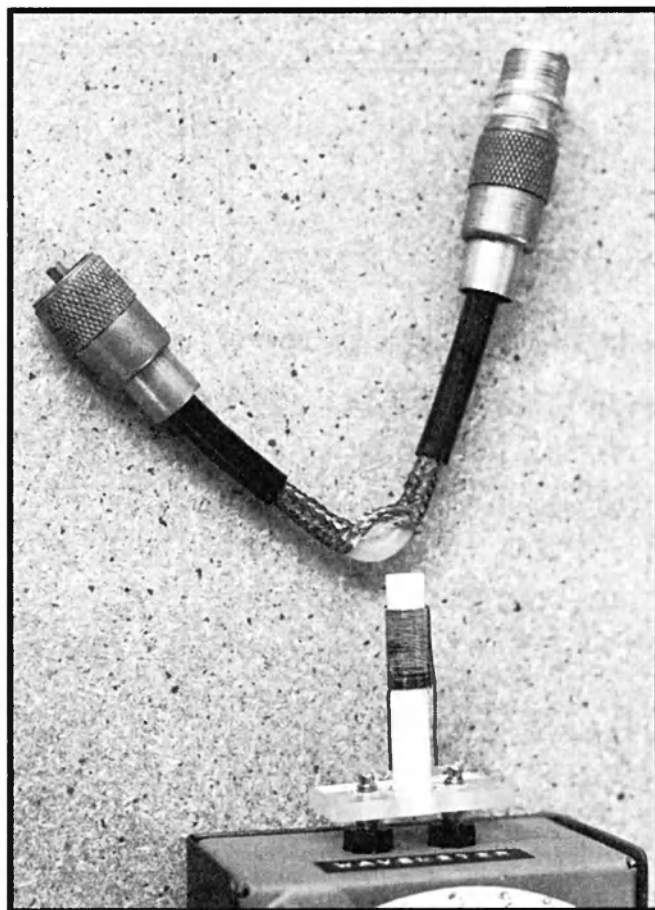


Photo 3 - The coax signal sampler (see text).



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Some applications have already been mentioned.

Take care when investigating high power or high voltage circuits. It should never be necessary to place the coil very close to a high power tank, for instance. Signal pick-up at 300 mm spacing should be adequate for normal purposes. Low power transmitters and oscillators will require rather closer coupling, depending on power level.

Photo 3 shows how a transmitter's output may be checked for unwanted signals.

Make up a short length of coax with a suitable connector at each end. Remove about 50 mm of coax jacket, bend the coax into a hairpin loop, then, using a scribe, carefully work the inner conductor out of the braid. Try not to break any of the braided wires.

Interpose your "sampler" cable between the transmitter and the dummy load. Hold the wavemeter coil near the sampling loop. Tune for the main signal first (as reference) then go looking for any suspected unwanted signals (eg harmonics).

Parts

The only special component is the 100 + 210 pF variable capacitor (a 365 pF single-gang will do). In addition to their ubiquity at hamfests, these are available from Truscotts Electronic World, 30 Lacey St Croydon 3136, phone 03 9723 3860, who can supply Perspex sheet in small quantities as well (I have no commercial connection with any such supplier).

The remaining parts should also be available from any of the well-known electronics suppliers. However, I always keep a few spares. Do please write to me if you have genuine difficulty in locating suitable components.

References and Further Reading

1. "Paddyboard" *Circuit Construction; Diamond, Amateur Radio Feb 1995.*
2. *Is it working properly? Use a Wavemeter; Blakeslee, WIKLK, HRH June 1977.*
3. *A Spectrum Analyser for Five Pounds; Ogden, G4JST, Ham Radio Today, July 1983.*

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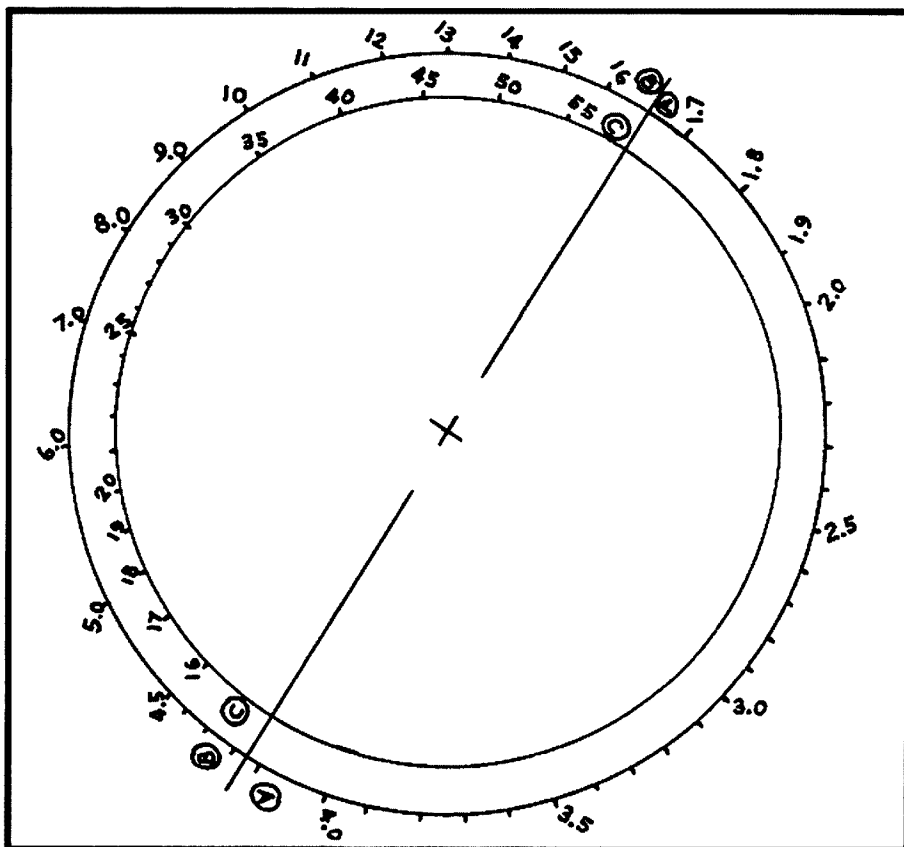
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My dial scale (shown here actual size as a guide only) should not be relied upon to match individual coil/capacitor combinations.

Technical

Technical Abstracts

Gil Sones VK3AUI
30 Moore Street
Box Hill South VIC 3128

The Cube Tamer

The simple handy power supply we know as a plug pack is known elsewhere as a wall cube or as a wall wart. They are handy sources of DC for a

circuit was the work of Mike Aiello N2HTT.

Mike packed a rectifier and some filter capacitors, together with a three terminal regulator, into a jiffy box. A plug pack

output lead from a DC plug pack could be used. The regulated output can be via the connector of your choice.

Plug packs often have outputs which vary somewhat from the nominal and so it pays to check. The output is load dependent from most types which is why the cube tamer came into being.

The rectifier used in the original was a 400 V 4 A bridge, but for most cases any potted silicon bridge rectifier would do. The regulator used was a one amp type.

RF Speech Clipper

An RF speech clipper allows heavy clipping without the harmonics and

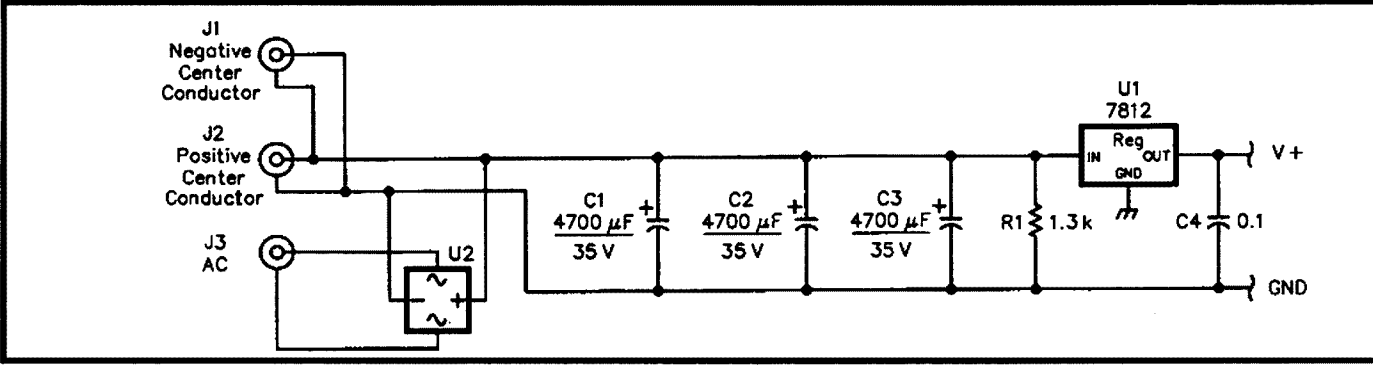


Fig 1 - Schematic diagram of the Cube Tamer.

variety of uses, but are usually not regulated. In QST May 1998 a circuit appeared which will provide a regulated output from one of these devices. The

or, as he called it, a wall cube, can be used with the circuit to give a regulated DC supply for a project. As the circuit contains a bridge rectifier and a filter capacitor it can be used with either AC output or DC output plug packs. You just need one with sufficient output for your requirements.

The circuit is shown in Fig 1. Mike provided for three inputs so that an AC plug pack or either polarity plug pack

intermodulation products present in audio clippers.

A circuit using relatively readily available components appeared in the Eurotek column of Erwin David G4LQI in October 1998 RadCom. The circuit was the work of Joachim Münch DF4ZS who wanted to give some more punch to his QRP SSB signal.

The clipper is shown below in Fig 2. The circuit uses Murata ceramic filter

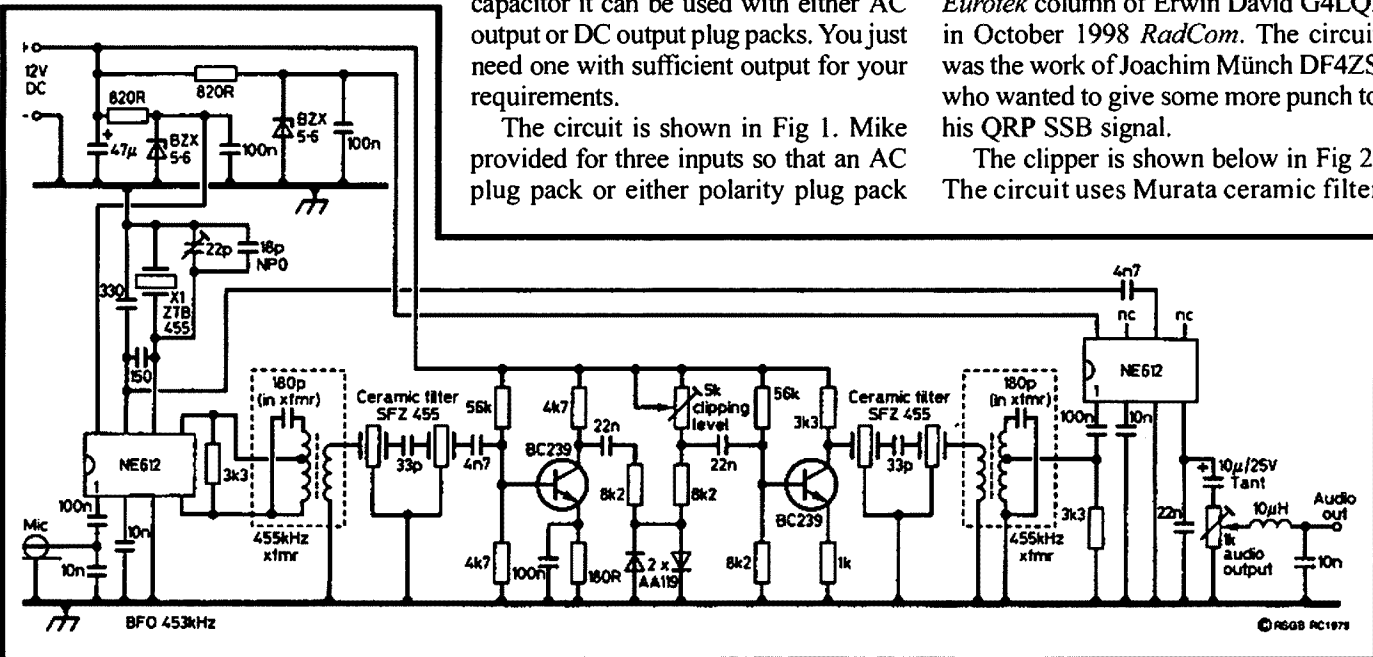


Fig 2 - Schematic diagram of the DF4ZS RF Speech Clipper.

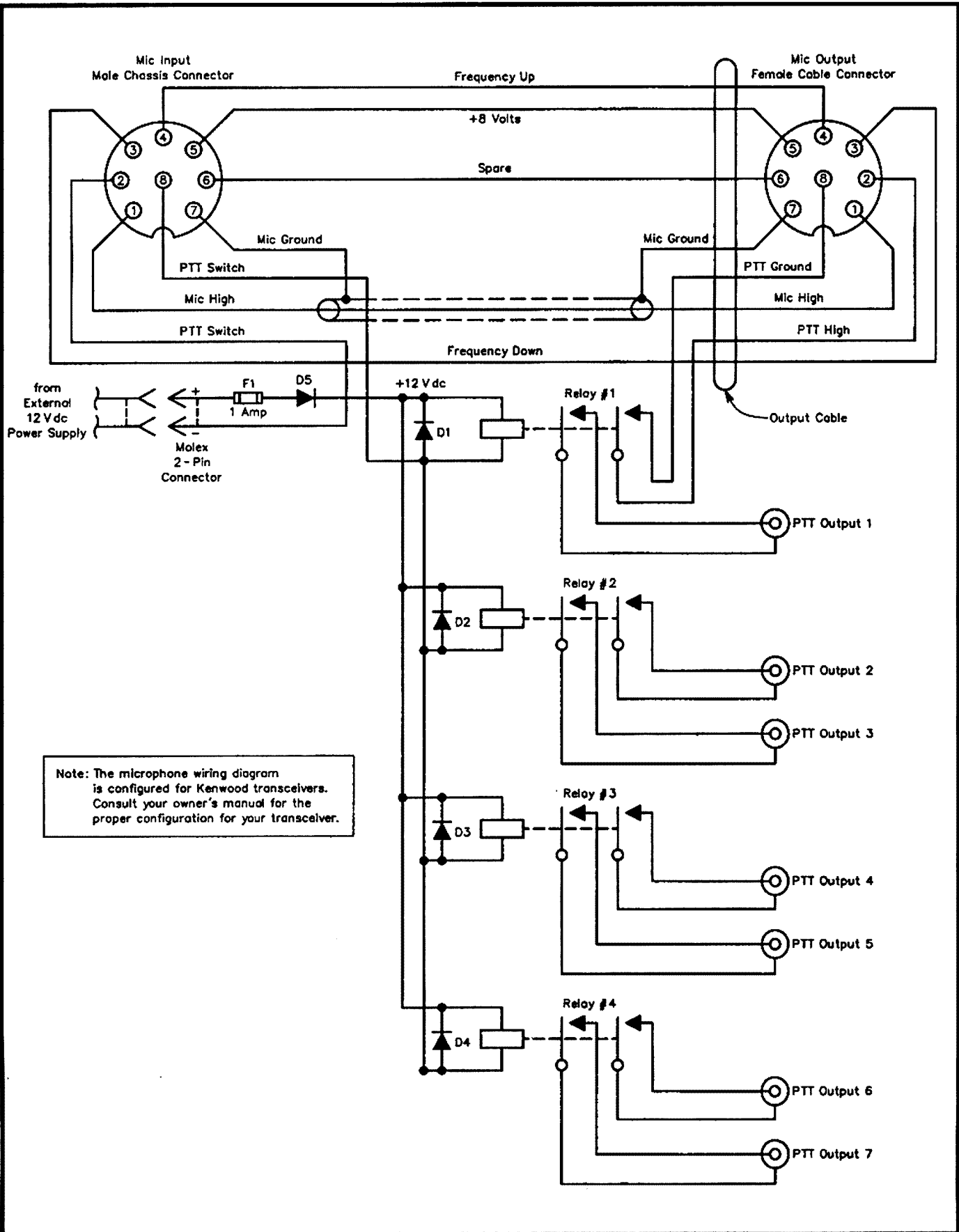


Fig 3 - Schematic diagram of the PTT Repeater Box.

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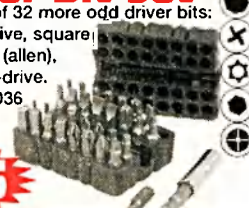
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elements both for the 453 kHz oscillator and for the 455 kHz filters. The oscillator resonator is a Murata ZTB455 and the filters use a Toko S74232 Black Core resonator with a Murata SFZ455 ceramic resonator.

Setting up should be done with a two tone generator and CRO. A counter would also be useful. The test equipment does not have to be pretentious as the clipper works at 455 kHz.

PTT Repeater Box

A handy transceiver accessory appeared in August 1998 issue of *QST*. A PTT repeater accessory box was described by Dave Miller NZ9E. This accessory was for a Kenwood transceiver but, with a little modification to the microphone connections, could be used with other brands of transceiver. There is considerable variation in microphone connections between manufacturers.

There are many occasions when it is necessary to key accessories from the PTT line. Most transceivers have an auxiliary output but it often has limitations as to voltage, current and polarity. The accessory box overcomes the limitations by intercepting the PTT line in the microphone cable and relay isolating the auxiliary outputs. To ensure relative timing the PTT to the transceiver is also relay switched.

The circuit is shown in Fig 3. Relays for this circuit could be any small 12 volt relay from one of the usual suppliers. Small relays with one amp contact ratings should be suitable for most of the usual accessories. The 12 volt nominal supply could come from the transceiver power supply or you could use a plug pack. Do not forget to install the diodes across the relay coils or the back EMFs could cause a lot of trouble. The diodes are 400 V, 1 A silicon diodes. ar



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■ Book Review

RSGB IOTA Directory & Yearbook 1998/99

Publisher: Radio Society of Great Britain
Reviewed by: Ron Fisher VK3OM

It is just over a year ago that I reviewed the 1997 edition of the RSGB IOTA Directory. Amazing as it seems, something over 8000 copies of that original directory were sold. It seems that there is a good deal of interest out there.

This new edition has been brought right up to date and should be required reading for any IOTA enthusiast or for any amateur interested in DX in general. If you haven't caught up with IOTA, a few words of explanation might not go astray.

IOTA stands for "Islands on the Air" and, with the upturn in propagation on the DX bands, has become an extremely popular way to work both to and from out-of-the-way places. However, to participate on the "from" side, you don't have to travel to Timbuktu. A suitable island might be right at the end of your street and you can chase islands from the comfort of your shack at home.

So, what does the new edition have? Even if you already have the earlier edition, it is the yearbook section of this new book which makes it worthwhile. The yearbook has been completely revised and contains the Annual Honour Roll listing, articles on IOTA and the Environment, Internet sites and the new certificate holders. Much of this new edition is in colour with plenty of excellent photos of both island expeditions and home station participants.

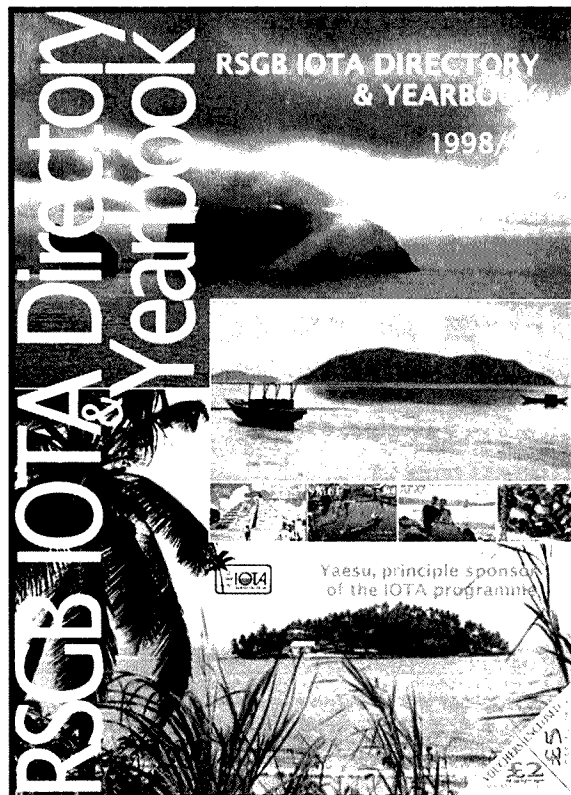
There are eight pages of

"DXpedition Roundup" describing the major IOTA expeditions which have taken place since the previous edition, illustrated with over 40 colour photographs and maps.

The new IOTA Directory runs to a total of 112 pages which is 17% larger than the earlier edition.

Our review Directory was sent direct to us from the RSGB. You can obtain one from the RSGB direct either by using your credit card to pay \$US20, which includes air mail postage, or by forwarding 26 IRCs plus four IRCs for air mail postage.

If you are the least bit interested in DX, the RSGB IOTA Directory & Yearbook is highly recommended. ar



possible due to a sporadic-E propagation opening.

Equipment

The author has taken some or all of the following on trips made:

Yaesu FT-290R two metre all mode transceiver (with batteries);

Sony ICF7600D general coverage LW/MW/SW SSB/AM receiver;

12 V, 6.5 AH sealed lead acid battery;

Dipole antenna for 146 MHz;

Earphones;

Call Book or repeater list;

Map of area travelled, preferably showing repeater sites;

Logbook.

Any two metre or two metre/seventy centimetre handheld would be a good choice for the transceiver. A rig with a wide-band VHF/UHF receiver is best for tuning around in areas where no amateur repeater is within range. Buy the matching headset or plug in your own earphones to avoid disturbing other passengers.

Some hand-held transceivers come with a choice of several battery packs to provide for different transmit power settings. An RF output power level of five watts or so is desirable, particularly in rural areas, to maximise transmitting range. However, a trade-off has to be made between talk time and power output.

NiCad battery packs are usually adequate for short trips. A 12 volt sealed lead acid battery (3 to 7 AH) is better for longer journeys. See your transceiver's operating manual for advice on connecting your rig to an external 12 volt battery. When it's not convenient to carry such batteries and chargers, alkaline dry cells are highly recommended. These are expensive but can provide hours of reliable operation on long trips.

For best results, use an antenna better than the standard helical supplied with most handhelds. A vertical dipole made from RG58 coaxial cable is compact, flexible, quick to make and delivers good performance from a coach or train carriage. Suction cups should be used to attach the antenna to the inside of the window, perhaps concealed behind a curtain. Constructional details of such an antenna appeared in a previous *Novice Notes* and can be found on *Novice Notes Online*.

Novice Notes

Amateur Radio on Public Transport

Peter Parker VK3YE

12/8 Walnut Street, Carnegie VIC 3163

E-mail: parkerp@alphalink.com.au

Novice Notes Online: <http://www.alphalink.com.au/~parkerp/nonline.htm>

Introduction

Most articles and handbook chapters on mobile operation concentrate on operating from private cars and boats. They normally assume that it is possible to mount a fairly efficient antenna outside the vehicle.

Users of public transport do not usually have this luxury. Nevertheless, it is possible to enjoy amateur radio while travelling in trains, trams, buses and ferries. This article tells you how. It's based on personal experience gained from operation on trains, trams and buses in three states.

Advantages and Disadvantages

Operating from public transport has a number of disadvantages compared to transmitting from a car. These include the need to carry your own power source (instead of relying on the car battery), the lower transmit power possible from hand-carried transceivers, and the difficulty of erecting antennas outside the vehicle. All this means that a portable station in a bus or train carriage will have a lesser range than a mobile station.

However, this type of operation has advantages too. Not having to concentrate on the road and having both hands available means that using and adjusting equipment is easier. The greater height of coaches (compared to cars) means that in-coach antennas operate better than might be expected. The risk of being stopped by police for operating a mobile transceiver is eliminated and the novelty factor of working a train or bus mobile station increases the number of contacts obtained.

There are some differences between operating in urban and rural areas. In

cities there will often be a choice of repeaters to use if the signals into one are marginal. In contrast, when travelling through the country, there will be times when no repeater at all is accessible.

Repeaters may be located in a poor position relative to the railway or coach route, or be at some distance from the route taken. In such cases, there may be coverage for only a 10 or 15 km stretch of the road or track before the repeater becomes inaccessible. At other times, much longer distances are easily covered.

Novice Notes Online URL Change

Novice Notes Online has been moved to another Internet Server Provider (ISP). To see *Novice Notes* articles on the Internet, readers should now point their browsers to <http://www.alphalink.com.au/~parkerp/nonline.htm>. Any bookmarks or links should also be updated. The *Australian QRP Home Page* and *Peter Parker's Projects Page* are also affected by the change. To get to the revised pages, type in <http://www.alphalink.com.au/~parkerp/>.

For example, with 2.5 watts and a dipole antenna it was possible to access the 6950 Mt Ginini repeater from Cootamundra, some 120 kilometres away. Such distances are not common; ranges of 15 to 30 kilometres are more usual.

Provided that you can access a repeater, contacts are possible over the repeater's entire coverage area. The longest distance contact made from a train by the author was a South Australian station who was worked when the Melbourne-bound XPT train was approaching Wagga. The contact was

Operating

Most contacts will be on FM. This is because of the greater activity on FM and the existence of repeaters. The vertical polarisation that FM operators use also helps because vertical antennas are easier to erect in a coach or train carriage than the horizontal antennas used for SSB.

However, having said this, mobile SSB operation is always interesting and allows greater range than FM simplex. The ability to tune around for beacons (ranges of 60 - 120 km are typical) is another benefit of carrying SSB gear. If you do go SSB mobile, tell others about your trip and/or arrange times for local operators to listen for you to maximise the possibility of making contacts.

You should know the locations of repeaters along your route before setting off. A repeater list, such as in the *WIA Call Book 99*, and a good map (showing mountains) is useful here. Make a list of repeaters within 50 or 100 kilometres of your route and try accessing them as you travel along. Always use the actual location of the repeater (usually a mountain) rather than the nearest big town with which repeaters are often identified. The repeater may be some distance from the town and not be easily accessible from within the town itself.

Information on the locations of repeaters is also important when deciding on which side of the train carriage or coach to sit. If there's a choice, get a window seat facing the direction of most repeaters that you wish to use.

Even quite large towns may have repeaters that are accessible with a 25 watt mobile station, but not with a two watt handheld in the town centre. The

author has found that calling on 146.500 MHz is sometimes successful. Provided the other station has a good antenna, simplex contacts from a coach lasting 20 or more minutes are possible, especially if traffic congestion is reducing travel speed. Simplex operation is also practical in capital cities such as Melbourne, where the terrain is mainly flat.

Receiving

When it is not possible to trigger repeaters or obtain simplex contacts, it's interesting to see what can be received from inside a bus or train carriage. In such situations, a scanner and/or HF receiver is useful.

Receiving beacons on the low end of two metres has already been mentioned. Use an SSB receiver for best reception. Those without an SSB receiver could try tuning in to the Morse practice beacons that operate in some cities; able to be received on a standard FM transceiver, their range can be considerable.

Below the AM broadcast band there are low frequency beacons for aircraft navigation. These transmit a Morse Code identification and, sometimes, weather bulletins. In most areas, several of these should be audible.

If you can extend the telescopic whip of your short wave receiver, it may be possible to pick up foreign broadcast stations, especially if travelling in a coach or bus. The time of day is important; around noon you may not hear anything, but signals improve by the early evening. Reception of stronger HF amateur signals may also be possible, depending on band conditions.

Many VHF/UHF amateur transceivers include extended coverage VHF/UHF

reception facilities. This allows reception of commercial and other two-way radio traffic. Either program several known active frequencies into the memories, or use the radio's scan feature.

The main problems encountered when trying to use a receiver in a train, tram or bus are noise and shielding caused by the vehicle's metal body. Both trains and coaches can generate noise, but this usually is not serious, at least on VHF. However, trams can be a noisier receiving environment. Shielding of signals is not usually a severe problem on a bus or coach, especially if it has large windows. Trains are significantly poorer RF environments than buses, and reception of LF, MF and HF signals is usually non-existent unless the signal is very local. Interestingly, VHF radio reception is usually quite good on a train. Whatever vehicle you are in, placing the receiver near the window usually improves signal strength.

Other Activities

This article has concentrated on voice repeater and simplex operation. However, other modes may be possible whilst bus or train mobile. Packet (in conjunction with a laptop computer) and CW offer the advantage of not requiring a microphone (thus drawing less attention to oneself). However, packet requires stronger signals than FM voice, and is prone to frequent disconnects. CW operation would allow longer transmitting ranges than SSB or FM simplex. However, the lack of activity means that you would need to arrange skeds with operators along your route beforehand.

Contesting is another activity that should be practical from a bus or train. Those contests that have high local VHF activity combined with credit for repeat contacts (such as the Remembrance Day) would be well suited to this type of operation. Travel on the major rail lines or bus routes would place you within easy simplex range of most operators at some time during the contest period. Routes that produce the most contacts could be travelled every few hours to maximise the number of repeat contacts. The purchase of a daily or weekly ticket is suggested to keep the fares incurred by this amount of travel low.

ar



Trams can be noisier than trains for receiving.

"Fall Back" Options - Plan A

If these two methods fail because the station suddenly "signs," QSYs to another band, or QRN, QRM, or QSB obscure their transmission, there are a few "fallback" plans you can use.

One option is to read through the many DX-bulletins which are posted to the packet bulletin board network (Oh, don't say that you aren't on packet! If you're not, read my article, "VHF Packet Radio: Six Steps to Digital Paradise" in *Radio & Communications*, November 1997, pp 32-35, and you'll be convinced otherwise). These messages can either be read on-line or downloaded to your PC.

For example, one of the most popular QSL bulletins on packet is *425 DX News* (distributed weekly over the radio network) and another is the *Ohio/Penn DX Bulletin* (edited by Tedd Mirgliotta KB8NW). Have a look for them by setting your packet LC list mask to "dx*" and list the last fifteen or so packet messages — you should find them there.

While logged onto your packet BBS, have a look under the subject heading of "qsl*". Again, list the last 15 items and you may find information relating to the station you're hunting.

Plan B

Another fallback plan is to send a packet radio message with your QSL request to

■ Operating

Work 'em First, Worry Later - or How to Obtain QSL Routes

Hank Pruncken VK5JAZ
57 Davenport Terrace
Wayville SA 5034
slezak@dove.net.au

It has been said that working rare and exotic DX stations is a lot easier than getting QSL cards from them. The very first problem encountered in getting a QSL card is trying to determine the correct QSL route. Well, here are some tips to make that task easier.

Don't Let the Trees Obscure Your View of the Woods

The most efficient way of getting a station's correct QSL route is simply to ask the station operator "What is your QSL route?" when you work them.

Although this may seem obvious, many DXers overlook it. But having said that, operating conditions often prohibit asking the obvious — as is the case in big pile-ups for DXpeditions and during WW contests.

If you find yourself in this position, the next best way to obtain the QSL route is, after working the station, to standby on the frequency and listen for the operator's instructions. DXpeditions, and other rare callsigns, will generally transmit their QSL routes every few minutes in a bid to keep the traffic flowing; make note of their details.

Q S L - E X T R A M A Y ' 9 8 < B Y D B 1 J A W >

In:1

QSL

MAY 98

EXTRA

db1jau@db0oe.#nrw.deu
db1jau@ko4ks.lampr.org
db1jau@t.online.de
db1jau@qsl.net

compiled by: Mike Weiler, Stormstr.126
47445 Moers, Germany

F1Help F2Color F3search F4again

F8Topics ESC-Quit

Title screen from DB1JAW's QSL Database program.

one of several amateurs who maintain QSL databases. These volunteers include: Maurie, VK6NGG@VK6JZA.#PER.#HWA.AUS.OC; Nigel, G0RRW@GB7DBY.#23.GBR.EU; and Martin, OK1RR@OK0PRG.#BOH.CZE.EU.

Maurie's motto is, "If I don't have it, it hasn't happened yet." You can gauge from this mission statement how seriously these guys take their job; and if you avail yourself of their services, you can be sure of some pretty good results.

Plan C

Also, don't overlook the three excellent columns in *Radio & Communications*, namely *DX & Band Report*, *Islands on the Air*, and *Updating All the DX*, as well as VK2PS's column in *Amateur Radio* entitled *How's DX?*. These columns have their "finger on the pulse" and list all the action as it happens.

Lastly, if you have access to the Internet, you can check out one of the on-line call books, such as Buckmaster at http://www.buck.com/cgi-bin/do_hamcall.cgi or QRZ at <http://www.qrz.com>. These are the two most popular on-line databases and have hundreds of thousands of callsigns listed. Better still, these databases are up-dated daily, so if you are looking for a rare callsign and it isn't listed, wait a day or two and check them again - the callsign may have been added in the meantime.

Plan D

While you are on the Internet, log onto <http://www.qrz.com/~db1jaw>. Here you'll find a QSL database created and maintained by radio amateur Michael DB1JAW. It is entitled *QSL Extra* and is not an on-line database but an executable program that is updated by Michael bi-monthly (see the title screen on the previous page).

It can be down loaded from his Web site for free, and it will run on any PC, even an old machine with a 286 CPU! This program is an essential tool for any serious DXer! I recommend it.

Reinforcements Have Arrived

If you are looking for callsigns from such places as Andorra, Bermuda, Botswana, Canada, Egypt, Estonia, Finland, Germany, Guernsey, Hong Kong, Iceland,

■ Book Reviews

Amateur Radio Study Course and Radio Amateur Licence Study Guide

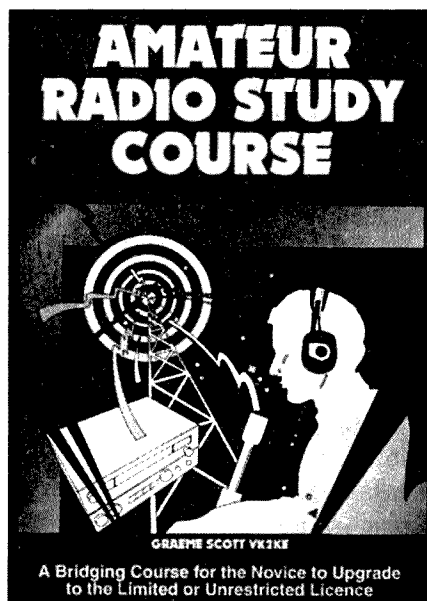
Author: Graeme Scott VK2KE

Reviewed by: Ron Cook VK3AFW

ISBN: 0 9587366-1-8 and 0 9587366-2-6

Paperback: 297 by 210 mm, 76 and 36 pages

RRP: \$13.00 and \$10.00



These two books provide a bridging course for the Novice to use for upgrading to either the Limited or Unrestricted licence.

I have critically reviewed both, and while they are not perfect and have one or two small errors, I can recommend them for their intended purpose and

congratulate Scotty on a job extremely well done.

In its seventy six pages the Amateur Radio Study Course book packs fifteen chapters and a trial AOCPL theory exam. To get the best for your efforts in reading this book, however, you really do need the companion Radio Amateur Licence Study Guide.

After studying Chapters 1 and 2 of the Study Course, the student can then attempt the questions in the Study Guide for those chapters. The questions are in the same multiple choice format of the AOCPL exam and the correct choices are given at the back of the book.

If any incorrect answers are given by the student, he or she returns to the Study Course and revises that part of the work before proceeding with the next chapters.

The Course recommends that the chapters should generally be studied in pairs.

This is an excellent and proven self-training system. Of course, the most important element is the Course Notes. Generally, I found the content to be accurate, clearly presented, and just at the right level. →

Italy, Lebanon, Lesotho, Luxembourg, Malaysia, Mozambique, Namibia, South Africa, Swaziland, Taiwan, Tajikistan, Tanzania, Zambia, or Zimbabwe, then have a look at my Web site at <http://dove.net.au/~slezak/vk5jaz.htm>. I have links to all of these call books and they can all be "interrogated" on-line.

Good Luck

As I said in the beginning, it's often easier working rare DX than getting the QSL cards. But, armed with this information, hopefully your first task will be made a little easier. Good hunting!

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Amateur Radio Study Course

Chapter 1: Electrical Laws and Circuits

This covers batteries and cells, Ohms law, power dissipation, resistors in series and parallel, AC, capacitors, inductors, tuned circuits and transformers.

It was in this chapter that I discovered an error. Whilst the text is correct, the diagram (Fig 1.8), which should show an integrating circuit, has the R and C transposed to make it a differentiating circuit.

Chapter 2: Circuit Symbols

This is quite short and has a collection of common circuit symbols with their names.

Chapter 3: Mathematics

This describes reactance, impedance, decibels and some binary logic.

Chapter 4: Power Supplies

This is a brief and non-mathematical treatment.

Chapter 5: Semiconductors

This is a bit light on, in my opinion.

Chapter 6: Vacuum Tubes

This also is brief - one page. While it lists the types of vacuum tubes still in use in transmitters and amplifiers, it does not explain the differences between a triode and a tetrode.

Not of much importance perhaps in today's solid state world; however, there is (or was until recently) at least one AOCPEXAM question in the bank which expects this knowledge.

This chapter has a diagram and description of a CRT.

Chapter 7: Oscillator and Amplifier Principles

I found the choice of transistor variable oscillators, the Armstrong and the Clapp a little unusual. Also, I would have expected at least one circuit to have a varicap in it.

Chapter 8: Transmitters

Again this is pretty superficial, with only two partial circuit block diagrams.

Chapter 9: Receivers

The coverage here is a bit better. There is a complete FM receiver block diagram and two photos of transceivers.

Chapter 10: Antennas and Transmission Lines

This has a reasonable coverage but does not show a sketch of the construction or the radiation pattern of a Yagi.

Chapter 11: Propagation

Surprisingly the sunspot cycles did not rate a mention; however, it is a good introduction of the very basics.

Chapter 12: Test Equipment and Measurements

I was surprised to see Lissajous figures score a whole column. If this is still an examination topic, then of course it must be included.

Otherwise, more space could have been devoted to the oscilloscope which these days may be a digital one.

As an aside, if the application of Lissajous figures is still an examination topic then it is high time it was eliminated. When was the last time a radio amateur made a frequency measurement this way?

The professionals stopped using them over thirty years ago!

Chapter 13: Interference

This is an important topic, and gets a satisfactory treatment.

Chapter 14: Advanced Modes of Transmission and Reception

The topics covered are high definition TV, slow scan TV, RTTY, repeaters, beacons, packet and satellites. The treatment varies from two paragraphs to two-thirds of a page each.

Chapter 15: Safety

Apart from the obvious hazard of electric shock, other hazards such as RF, acids and alkalines, PCBs, Beryllium oxide, are mentioned. The care necessary when charging batteries is covered. The dangers of indiscriminate mobile transmission, and overhead power lines, are also mentioned.

There is also a trial AOCPEXAM but, unfortunately, no answer check sheet that I could find.

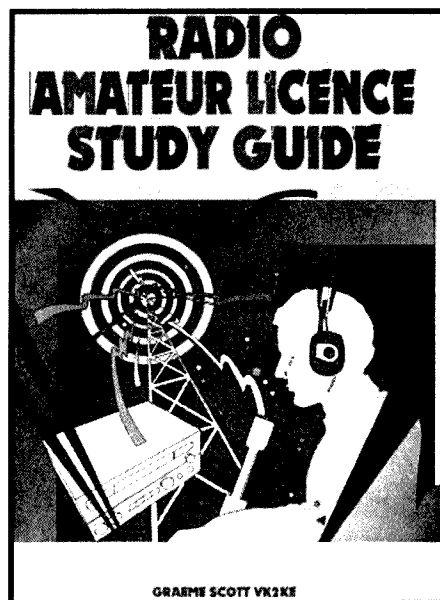
Radio Amateur Licence Study Guide

The Study Guide is a most valuable part of the pair, providing almost instant feedback on the student's knowledge. It has typically more than twenty questions on each chapter.

I only noted one error, where the symbol for a screened transformer only showed the screen, but no transformer.

Conclusions

The knowledge required to pass the AOCPEXAM is not particularly deep, but is wide ranging. This pair of books repre-



sent the quickest way I have seen yet for a Novice operator to study privately and successfully for the AOCPEXAM. It is recommended for this. It would also be excellent for club classes, in which further discussion could supplement the contents of the study course.

If you hold a NAOCP and want to upgrade, these books are definitely for you. They are inexpensive and may be obtained from the author, Graeme Scott VK2KE, PO Box 385 Albury, NSW, 2640.

If you want an in-depth reference and theory book, then buy the ARRL Amateur's Handbook or a similar publication as the treatment is too superficial for anything other than as a first introduction and its intended purpose.

Thanks to Scotty for providing the review copies.

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Amateur Radio Best Contribution Awards

At its October meeting, the Publications Committee selected the article by Will McGhie VK6UU "16 Digit DTMF Decoder" as the best contribution to the October issue.

At the November meeting the Committee's choice was the article by Drew Diamond VK3XU, "A J-Pole Antenna for Two Metres".

Bill Rice VK3ABP

ar

ALARA

Christine Taylor VK5CTY

ALARA Publicity Officer

16 Fairmont Avenue, Black Forest SA 5035

Packet: VK5CTY@VK5TTY

DXCC list. After all, there are now 331 countries on the list!

Interstate and Overseas Visitors

In September, Christine VK5CTY and Dot VK2DDB joined the regular ALARA luncheon in Melbourne. Although Bron knew that Christine would be at the luncheon, she didn't say so when Dot told the Monday Net that she was planning to use some Fly Buy points to attend. Dot was suitably surprised. It was particularly nice that the date was actually Mavis VK3KS's birthday.

Present (see photo 1) were, l-r back row, Christine VK5CTY, Robyn VK3ENX and Dot VK2DDB, and in the front row, l-r, Bron VK3DYF, Mavis VK3KS, Jessie VK3VAN and Jean Shaw (who has been intending to try for that licence for a number of years - maybe soon, eh, Jean?).

When in Geraldton, on their 10 week trip to VK8 and VK6, Meg VK5AOV (now VK5YG - LHS of photo 2) and OM David VK5OV, visited Bev VK6DE (RHS photo 2) and Brian VK6AI. They were delighted to find that Bev had Casayo J13CGH (centre, photo 2) with her OM Ayano and three year old daughter visiting them at the same time.



Meg says the little daughter has been taught a number of English words during her stay and could sing "Twinkle twinkle little star". She especially loved being carried round high on Brian's shoulders.

One of the main purposes of the choice of route and time of the trip Meg and David followed was to see the wildflowers. They were overwhelmed by the variety and beauty of them all. Geraldton was a particularly good area. They can recommend VK6 for a caravan holiday, especially in early Spring.

On their way round Australia for the third time, Maxie DJ4YL and her sister Marille had a lovely picnic with Dot VK2DDB and her family while in Sydney in October. They also stayed with Christine VK5CTY and Geoff VK5TY at their shack in the country in early November (they have been 'hearing' about this shack for many years in letters, now they have seen it themselves!).

The timing of their Adelaide visit also allowed them to join the VK5 girls for the regular luncheon, of which there might be a photo next month.

Some Historical Notes

Did you read the packet bulletin entitled "World's oldest YL ham"? If so, this is not news to you, but it will be for others.

ALARA Contest

The Contest, run under its new rules, was a great success. Many more contacts were made than usual and much fun was had by all. As always, the ALARA Contest is a friendly contest; this year the repeat contacts made it better than ever. Now all that is left is for everyone to send their logs to Marilyn VK3DMS at 68 Bowering Lane Mildura 3500.

YL (and other) Awards

If you are a YL interested in awards, particularly with other YLs, the listing in October *Amateur Radio* is for you.

Australia has the ALARA Award open to YL and OM amateurs, local and DX. New Zealand has two awards, with the WARO Century Award gained in steps. There are more awards available for and with US YLs, which is not surprising as there are more amateurs of all categories in that country, but we can aim for many of these awards from VK land.

The DX-YL only requires 25 YL contacts outside your own country. Have a go! One day you may join Gwen VK3DYL in the



Photo 1.

Iris ZS2AA is 95 years old! She qualified as a ham in 1937, and is still active, and still drives a car from which she operates on two metres. Only recently Iris had a new tri-band erected at her QTH from which she is active on the HF DX bands.

Iris is an Honorary Life Member of the South African Radio League and an Honorary Life President of the Border Radio Club.

Thanks to Colin ZS2CR for the bulletin.

Following on my historical items in October *Amateur Radio*, I had a very interesting letter from Dave VK6ATE with some more information about early YL activities. It has shed some light on the mysteries of early radio participation by YL operators in VK6.

For example, a Miss Stevens was listed as an early 'experimenter'. Alan discovered that Miss Stevens was known as 'Ghostly Stevens' because of the way she used to flit around the corridors. She was the Science Mistress at Bunbury High School and used to reward her 'achievers' by keeping them in after school to listen to 6WF, the only station then in WA.

Miss Stevens does not appear to have taken out a Transmitting licence when they became available and no more is known of her after 1939. Do you know any more?

Do you know anything about similar participation in your state? Do you have contact with any early amateurs, even those no longer active in the hobby.

Please talk to them or let them talk to you about their experiences before we lose all that information. If any of the stories concern YLs please send me a note about it. ALARA has

Education Notes

Brenda M Edmonds VK3KT
Federal Education Co-ordinator
PO Box 445, Blackburn VIC 3130

Seasonal greetings and all good wishes for 1999 to all readers.

At the end of a year, it is common to consider the past year and tally achievements and failures. In my field, 1998 has not been a very satisfactory or productive year, although

quite a number of names about whom we know only that. We'd love to know more.

It's Christmas! Greetings to All!

This issue will reach you as you start your Christmas preparations. I hope the fairy drawn by Sally VK4SHE will bless you with her wand and give you a giggle when you see the radio on her waist. We must keep our priorities right, mustn't we?

73 to everyone, 33 to the YLs. May the Festive Season bring you all you wish. ar

other bodies may have achieved more than I have. Much of the time has been spent in waiting for responses from other organisations or persons.

What has been achieved? New updated Regulations examination papers have been approved and put into use. A few more are in process of being approved. This has been the result of the changes made during the reviews of the Radiocommunications Act and the Regulations.

What has not been achieved? I have not been able to convince the ACA to publish the resource material for the amateur service in booklet or brochure form. I feel that the present system of putting everything up on the Internet discriminates against people who do not have access to the Internet, and is causing stress because many of the candidates do not know what they are expected to learn.

As far as I know, there is no list published of all the papers that are needed by a candidate, and there are several papers from which only a few paragraphs are required. A candidate who downloads all the necessary papers finds that it forms a stack about 2 cm high - a bit different from the three brochures RIB 70, 71 and 72.

I have also not been able to finalise discussions on syllabus matters with the ACA. This has had to wait until the status of the examination development is more advanced.

A meeting of the ACA liaison group with the ACA is scheduled for early December. We hope that at that meeting we will find out the ACA's intentions regarding the future of the examination service. A number of possible changes have been foreshadowed, but until more is known of the intentions many of the WIA plans have had to be put on hold.

And what about 1999? I can only hope that some of these up-in-the-air matters will be finalised, that a simpler system will be put into place for examinations, and that the membership of the WIA will start to recover and increase.

Again, my best wishes to you all. ar

NEW AR ADDRESS

Please note that the address for all correspondence, articles and Hamads for *Amateur Radio* magazine has changed to:

**PO Box 2175
Cauffield Junction VIC 3161**

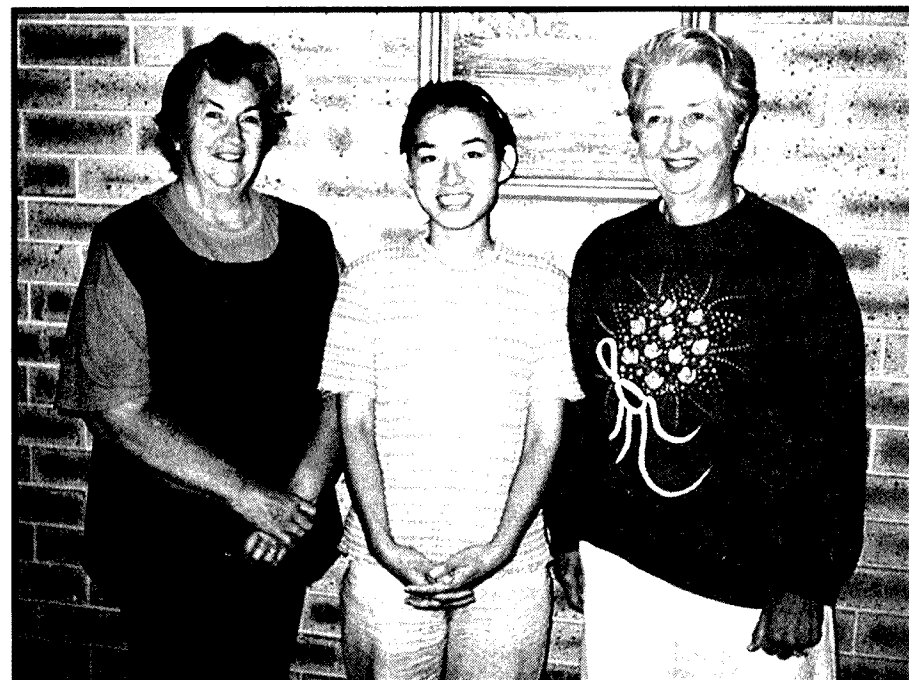


Photo 2

AWARDS

John Kelleher VK3DP

Federal Awards Officer
4 Brook Crescent, Box Hill South, VIC 3128
Tel: 03 9889 8393

VK1 Award

From Tex VK1TX comes information on the prestigious VK1 Award. This award is issued by the WIA ACT Division to any licensed amateur operator or short-wave listener. The certificate displays one of Canberra's most distinctive landmarks, the Telecom Tower, situated on Black Mountain in the heart of Australia's Capital City. The tower is depicted in light blue on a white background with award information in black lettering.

The information required is a log extract showing date and time in UTC, mode, call

sign of the VK1 station worked, and ciphers exchanged. Short-wave listeners should include the station worked by the VK1 station being claimed.

Each VK1 callsign worked counts as one point. Each callsign may only be claimed once. The change of status to mobile, portable, etc is not allowed as a separate valid contact. Contacts via terrestrial repeater systems are not valid contacts towards the award.

Requirements

HF Within VK (excluding VK9 & VK0)

Basic Award 20 points.

Bronze Upgrade 50 points.

Silver Upgrade 75 points.

Gold Upgrade 100 points.

HF Outside VK (including VK9 & VK0)

Basic Award 10 points.

Silver Upgrade 25 points.

Gold Upgrade 50 points.

VHF and higher frequencies requirements are the same as HF outside Australia for all areas. Cost of the Basic Award is \$AUS3.00 or five IRCs. Each upgrade costs \$AUS1.00 or five IRCs.

In an attempt to assist stations qualifying for the award, a VK1 Award Net operates each Sunday evening on 3.590 MHz immediately following the VK1 Divisional

Broadcast, at approximately 2030 hrs EAST.

Applications for the Award should be addressed to: The Award Manager VK1TX, 27 Buckley Circuit, Kam-bah ACT 2902.

LRMD-60 Award Rules

The following information from the Lithuanian Amateur Radio Society was received too late to be included in the November issue of *Amateur Radio*.

This Award is issued to commemorate the Lithuanian Amateur Radio Society's 60th Anniversary. EU stations need to make six QSOs with different special LY stations (using LY60, LY61, LY62, LY63 and LY64 prefixes). Non EU stations need three such QSOs. On 50 MHz, VHF and UHF stations need only one QSO with a special LY station.

Special LY stations will be active until 31 December 1998. Applications should be in the form of a GCR list, include a fee of \$US 5.00 or 10 IRCs, and will be accepted until 1 April 1999. The address for all applications is: LRMD Awards Manager, PO Box 1000, Vilnius, Lithuania 2001.

French Awards

The following are extracts from the French Awards Programme. The following general rules apply to all certificates and awards issued by the REF (Reseau des Emetteurs Francais) and should be read in conjunction with the conditions which govern the award of individual certificates.

1. All REF certificates and awards will be issued to transmitting and/or SWL.

2. In agreement with the IARU Region 1 rules, each claim must be accompanied by a QSO list and by a statement from the applicant's national DX Awards Manager that correctly filled in QSLs are really in the possession of the applicant. If it's not possible, the applicant must submit all the QSLs concerned.

3. In the case of any dispute concerning a claim, the decision of the council of the REF shall be final.

The DUF Award (Diplome de l'Univers Francophone)

May be claimed for having contacted/heard, and having received QSL cards from the DUF countries list.

DUF 1 Awarded for contacting five different DUF countries in three continents.

DUF 2 Awarded for contacting eight different DUF countries in four continents.

DUF 3 Awarded for contacting 10 different DUF countries in five continents

DUF 4 Awarded for contacting 20 different DUF countries in six continents.

DUF Medal A very nice medal which can be claimed by all recipients of DUF 4.

DUF Countries List

Europe

- 01 - France F
- 02 - Corsica TK
- 03 - Monaco 3A
- 04 - Andorra C3
- 05 - Fr Army in Germany DA/DL

Africa

- 06 - Algeria 7X (after 1-7-62)
- 07 - Tunisia 3V
- 08 - Morocco CN
- 09 - C African Republic TL (after 13.8.60)
- 10 - Congo TN (after 15.6.60)
- 11 - Ivory Coast TU (after 7.8.60)
- 12 - Benin TY (after 1.8.60)
- 13 - Gabon TR (after 17.8.60)
- 14 - Rep of Guinea 3X (after 1.10.58)
- 15 - Mali TZ (after 20.6.60)
- 16 - Mauritania 5T (after 20.6.60)



- 17 - Niger 5U (after 3.8.60)
- 18 - Senegal 6W (after 20.6.60)
- 19 - Chad TT (after 11.8.60)
- 20 - Burkina Fasso XT (after 5.8.60)
- 21 - Cameroon TJ (after 1.1.60)
- 22 - Togo 5V (after 27.4.60)
- 23 - Djibouti Rep J2
- 24 - Malagasy Dem Rep 5R (after 14.10.58)
- 25 - Mayotte FH (after 5.7.75)
- 26 - Comoros Rep D6 (after 5.7.75)
- 27 - Reunion FR
- 28 - Glorioso FR/G (after 25.6.60)
- 29 - Tromelin FR/T (after 25.6.60)
- 30 - Europa FR/E (after 1.8.68)
- 31 - Juan de Nova FR/J (after 25.6.60)

South America

- 32 - French Guiana FY

North America

- 33 - St Pierre - Miquelon FP
- 34 - Martinique FM
- 35 - Guadeloupe FG
- 36 - Saint Martin FG/FS
- 37 - Saint Barthelemy FG/
- 38 - Clipperton FO0

Asia

- 39 - Vietnam XV
- 40 - Cambodia XU
- 41 - Laos Peo Dem Rep XW

Oceania

- 42 - New Caledonia FK
- 43 - Loyalty, Belep, Huon, Pins Isl FK/
- 44 - Chesterfield, Walpole, Hunter, Matthew Isl FK/

- 45 - Wallis Isl FW
- 46 - Futuna Isl FW
- 47 - Vanuatu Rep YJ
- 48 - Windward Grp (Tahiti) FO
- 49 - Leeward Grp (Utorea) FO
- 50 - Austral Grp (Tubuai) FO
- 51 - Austral Grp (Rapa) FO
- 52 - Marquesas FO
- 53 - Gambier FO
- 54 - Tuamutu FO

Australes and Antarctica

- 55 - Adele Land FT Y
- 56 - Kerguelen FT X
- 57 - St Paul, Amsterdam FT Z
- 58 - Crozet Isl FT W

Fees for DUF 1, any part, 8 IRCs or \$US8.00; DUF 2, 10 IRCs or \$US10.00; DUF 3, 12 IRCs or \$US12.00; DUF 4, 16 IRCs or \$US14.00; DUF Medal, 24 IRCs or \$US21.00.

Send applications for any DUF series to: Edmond Dubois F9IL, Impasse du Sauria, 13410 Lambesc, France.

DTA Award (Diplome des Terres Australes)

Each claim must be accompanied by a QSO list, and by a statement from the applicant's National DX Award Manager that correctly filled QSLs are in possession of the applicant.

FT/X - Kerguelen Island

FT/Z - St Paul, New Amsterdam Isl

FT/W - Crozet Archipelago

FT/Y - Adelie Land (Dumont D'Urville)

DTA: Proof of contact with three territories.

DTA Excellence: Proof of contact with four territories.

Contacts on or after April 1946 qualify for the award. Applicants located outside France and territories need only supply a certified GCR list. Fees for DTA awards are 12 IRCs or \$12.00, and should be sent to: Max Pomel F6AXP, PO Box 73, F-63370 Lempdes, France.

Most Wanted Countries

On the subject of DX, I have pleasure in listing the 45 most wanted countries (entities):

1. P5 North Korea
2. BS7H Scarborough Reef
3. BV9P Pratas Island
4. 7O Yemen
5. E3 Eritrea
6. A5 Bhutan
7. VU4 Andaman and Nicobar Islands
8. FR/T Tromelin Island
9. VK0 Macquarie Island
10. FR/G Glorioso Island
11. VU7 Lakshadweep Islands
12. SV/A Mount Athos
13. Z3 Macedonia
14. T9 Bosnia and Herzegovina
15. ZL9 Auckland and Campbell Islands
16. 3Y Bouvet Island
17. 3B7 Agalega and St Brandon Islands
18. FT/J Juan de Nova, Europa
19. 5A Libya
20. ZS8MI Prince Edward and Marion Islands
21. FT8Z Amsterdam and St Paul Islands
22. FT8W Crozet Islands
23. 3C0 Annobon Island
24. FT8X Kerguelen Island
25. OK Czech Republic
26. VK0 Heard Island
27. VP8 South Georgia
28. HK0 Malpelo Island
29. XW Laos
30. TT8 Chad
31. PY0 St Peter and Paul Rocks
32. TN Congo
33. KH5K Kingman Reef
34. OM Slovak Republic
35. T30 Central Kiribati
36. VP8 South Sandwich Isl.
37. PY0 Trinidade and Martin Vaz Isls
38. VK9 Willis Island
39. ZL8 Kermadec Island
40. T33 Banaba Island
41. YA Afghanistan
42. EP Iran
43. S2 Bangladesh
44. 9U Burundi
45. 3B9 Rodriguez Island.

This is portion of the 1997 list. Some changes have taken place due to certain DX operations. ar

WICEN News

David Horsfall VK2KFU

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 Packet: VK2KFU@VK2KFU.NSW.AUS.OC
 E-mail: dave@gseac.com.au

The WICEN column returns! Sorry for the hiatus, gentle reader, but your scribe got caught up in some "Year 2000" software upgrades, which didn't go as smoothly as expected! Well, that's all water under the bridge now; incidentally, is your corporate database Y2K-compliant?

In the meantime, my plea for interstate news (ie other than NSW!) has borne fruit. I can do no less than reproduce some material sent to me by Trevor Connell VK8CO, the Northern Territory SCO, on formal training for WICEN personnel. This is something that will become important in the future.

National Training Syllabus

A proposal for a national training syllabus for all WICEN operators has been put to all Divisions. Moves for this have been around for several years, but nothing much had been achieved due to the slow and bureaucratic organisation that we sometimes are.

The objective of a training syllabus is to bring all WICEN operators throughout Australia to a common level of training, which is transportable between all Divisions.

The motivation to achieve agreement came when the SCO of the NT, Trevor Connell, and the State Training Officer of NSW, Peter Corkeron, combined talents, and over a period of six months produced an outline and details for a common syllabus. It is acknowledged that each State and Region may have peculiar requirements which differ from anywhere else, but provision is made to add local content.

It also shows other agencies, such as SES, that we are serious about our people being trained and having recognised skills.

There is also provision for recognition-for-prior-learning (RPL), which is an ever-increasingly important phase which takes advantage of the skills that a person brings to WICEN, and avoids tedious repetition of training. By producing documentary evidence or references, you can gain recognition for some or all of the learning outcomes.

FOR ALL YOUR COMMUNICATIONS NEEDS

Yaesu FT-1000MP Deluxe HF All Mode Transceiver

Yaesu has created a new 100W HF masterpiece using proven design techniques and a major new technology to the amateur marketplace: Enhanced Digital Signal Processing (EDSP). Teamed up with Direct Digital Synthesis, an outstanding receiver section featuring a high intercept front-end and a variety of IF filters (including a Collins Mechanical Filter), the FT-1000MP's exclusive EDSP facilities provide an impressive array of IF-based noise-reduction and interference reduction filters for enhanced receiver performance. Yaesu's IF-based EDSP system provides 4 random noise-reduction protocols, audio enhancement with 4 equalisation programs for Tx and 3 for Rx, and an automatic notch filter which eliminates multiple interfering carriers. A comprehensive menu system allows you to easily hear the effect of various EDSP settings, so you can choose the best selection for your operating conditions. Front panel selectable EDSP filter contours also aid QRM rejection, providing improved signal-to-noise ratios and razor sharp selectivity. The FT-1000MP also features selectable receiver front-ends, an inbuilt AC power supply and auto antenna tuner, 2 main antenna sockets, selectable tuning steps as small as 0.625Hz, dual-mode noise blankers, 13.8V DC socket, 500Hz and 6kHz IF crystal filters, an RS-232 computer interface, and an MH-31B8 hand microphone. With so many features in this new transceiver, why not ask for a copy of the 12-page FT-1000MP colour brochure, or 46 page Technical Overview for more detailed information.

D 3400

**2 YEAR WARRANTY
BEAT THE PRICE RISE!**

\$3995



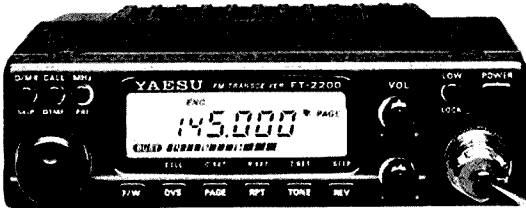
**BOOK
CLEARANCE
BOOK
CLEARANCE
BOOK
CLEARANCE**

B 2105	ARRL Yagi Antenna Design	\$9.95	save \$15	25 pcs only
B 2110	Antennas – Low Band DXing	\$9.95	save \$15	40 pcs only
B 2309	RFI – How to Find & Fix It	\$5.00	save \$19.95	80 pcs only
B 2402	Gateway to Packet Radio	\$5.00	save \$14.50	25 pcs only
B 2410	Packet – Speed & more Speed	\$12.95	save \$12	90 pcs only
B 2400	ARRL Satellite Anthology	\$9.95	save \$9	25 pcs only

Limited stocks. Title availability may vary from store to store. No deposits or rainchecks are available on these titles.

EX DEMO CLEARANCE

Get in quick and grab a bargain! These ex-demo Yaesu transceivers may have a few marks or scratches, but you'll save a fortune. **2 YEAR WARRANTY** applies, but stocks are strictly limited.



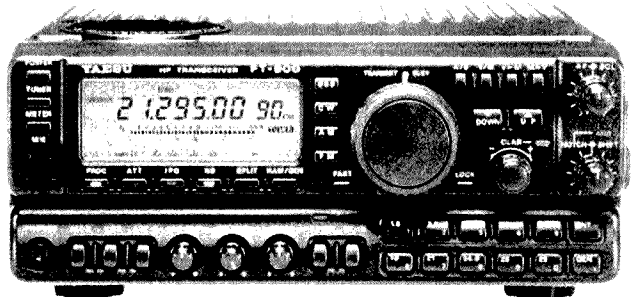
FT-220D 2m Mobile Transceiver

A compact, fully-featured 2m FM transceiver providing selectable power output of 5, 25 & 50 watts.

- 49 tuneable memories • Large variety of scanning mode • 7 user-selectable channel steps (5kHz to 50kHz) • Back-lit LCD screen and knobs • 38 tone CTCSS encoder • DTMF based paging & selective calling • 10 DTMF auto-dial memories • supplied with microphone, mounting bracket & DC power lead

D 3635

6 PIECES ONLY **\$399** **SAVE \$100**



Yaesu FT-900 Deluxe HF Mobile

A practical 100W HF mobile transceiver that doesn't compromise base station performance. During mobile operation, a compact front sub-panel can be remotely mounted using an optional kit. The large "Omni-Glow" backlit LCD screen provides high visibility over wide viewing angles, while the voice and data between the sub-panel and the transceiver are digital to prevent RF feedback or noise problems. A tough diecast top panel/heatsink allows extended transmissions while still allowing the optional ATU-2 auto antenna tuner to be mounted inside the transceiver. D 3280

2 YEAR WARRANTY

\$1695 **SAVE \$200**

YAESU **4 PIECES ONLY**



That's where you go!

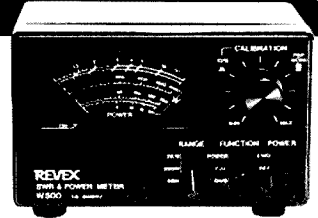
DECEMBER BEST BUYS

HF/6m Power/SWR Meter

For high-power operation over the 1.8-60MHz range, this Japanese-made Revex W500 provides a large, clear meter for ease of reading. Enclosed in an all-metal case for long term durability, the meter has power ranges of 20W, 200W and 2kW with less than 0.1dB loss and SWR measurement.

D 1365

SAVE \$20 **\$149**



FT-50RD 2m/70cm Handheld

The Yaesu FT-50RD is an amazingly compact 2m/70cm amateur band handheld transceiver which provides MIL-STD 810 shock and vibration resistance, super wideband receiver coverage, simple menu settings for most functions, and compatibility with the optional Yaesu ADMS-1D software/interface package for PC programming of many functions.

Other features include:

- Tx 144-148MHz, 430 - 450MHz
- Rx 76-200, 300 - 540, 590 - 999MHz (cellular blocked)
- FTT-12 keypad provides Digital Voice Recording, CTCSS/DCS scanning, and CTCSS encode/decode
- 2m/70cm RF output: 2.5, 1.0, 0.1W standard, up to 5W with 9.6V battery or 12V DC socket
- "Omni-glow" LCD screen for easier night-time viewing
- 112 memory channels with 4 character alpha naming
- Dual watch allows monitoring of sub-band activity
- Direct FM modulation for better audio quality

- 5 battery saving systems (includes Rx and Tx Save)
 - Comes with FNB-40 slimline 6V 650mA/H Nicad battery pack, flexible 2m/70cm antenna and modified M-9626 AC plugpack adaptor for Nicad charging
- D 3660

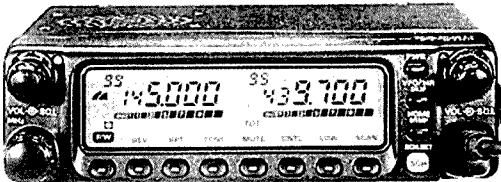
YAESU 2 YEAR WARRANTY
BONUS! **\$569***

Pay only half-price for a second Nicad pack when purchased with the FT-50RD. Limit one per customer. Applies to FNB-40, 41, 42 only.



FT-8100R 2m/70cm Mobile

The stunning new Yaesu FT-8100R is a state-of-the-art 2m/70cm band mobile transceiver that combines high power and the industry's most versatile memory system with an excellent wideband receiver and solid construction. Its US MIL-STD-810 shock and vibration rating is your assurance of years of reliable operation. Includes hand mic, mounting bracket and fused DC power cord.



Other features include:

- 198 memory channels
- 1200/9600 baud packet socket
- Inbuilt antenna duplexer
- Inbuilt crossband repeater facility
- Dual receive capability (VHF/UHF, VHF/VHF, UHF/UHF)
- Optional removable front panel

Frequency range: Tx 144-148MHz, 430-450MHz
Rx 110-550MHz, 750-1330MHz

Output power: 2m: 50W, 20W, 5W
70cm: 35, 20, 5W

2 YEAR WARRANTY D 3314

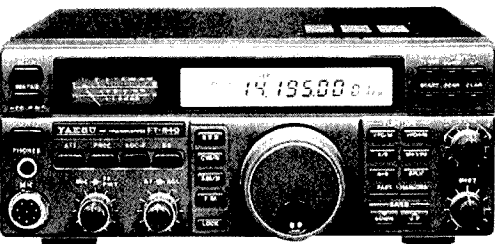
YAESU **\$899***

FT-840 Economical HF Mobile Transceiver

The Yaesu FT-840 doesn't compromise performance like many current micro-rigs. You get full 160m-10m coverage with 100W PEP on SSB/CW/AM, continuous receiver (100kHz-30MHz), a large LCD screen and an effective noise blanker. The FT-840 is simple to use, with an effective SSB speech processor, IF Shift to fight interference, and DDS oscillators for cleaner transmit and improved receiver performance. Includes DC power lead and hand microphone...just connect your power supply and antenna and start having fun!

D 3275

YAESU 2 YEAR WARRANTY
\$1495*



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FAX: (02) 9395 1155 within Australia and
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PO Box 321, North Ryde NSW 1670 (No Stamp Required)

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B 3599

Currently there are three modules. These are "WICEN OPERATOR," "WICEN SUPERVISOR," and "METHODS OF TRAINING." The learning outcomes for these are:

WICEN Operator:

Learning outcomes: On completion of this module, the member shall be able to:

1. Explain the role and structure of WICEN and appropriate Emergency Services.
2. Use radiotelephone procedure to send and receive a formal message. Demonstrate the correct procedures for keeping a Radio Operators Log Book.
3. Operate in the field.
4. Use topographical maps to navigate.
5. Set up and operate a station.
6. Demonstrate safe working practices.

WICEN Supervisor:

Learning outcomes: On completion of this module, the member shall be able to:

1. Explain how to liaise effectively with other organisations.
2. Explain the roles of organisations which are likely to request the support of WICEN.
3. State the principles of man management.
4. Perform administration applicable to an activation.
5. Explain stress management principles.
6. Activate WICEN at the request of another organisation.
7. Plan, conduct and finalise a training exercise.

Methods of Instruction:

Learning outcomes: On completion of this module, the member shall be able to:

1. Explain the principles of good presentation.
2. Explain the factors in student learning.
3. Describe the four methods of instruction.
4. Explain the structure of a lesson.
5. Demonstrate an ability to perform adequate preparation for a lesson.
6. Write a lesson plan.
7. Deliver a lesson.
8. Demonstrate an ability to utilise training aids.
9. Demonstrate correct questioning technique.
10. Demonstrate suitable methods of testing.

These proposed modules have been sent to each Division so that they can be discussed and, hopefully, adopted. To date I am aware that VK1, VK8 and, I think, VK2 have decided to run with them.

There is still some supporting material to be developed, although some already exists and will require little alteration.

It is anticipated that the procedure will be that each Region Co-ordinator will RPL-assess members where appropriate, and then conduct training courses to achieve the remaining outcomes. This could take over

■ **QSLing**

Record Contacts on Your PC

Peter Wajngarten VK3OJ
9 Western Road
Boronia VIC 3155
pwajng@alphalink.com.au

Often, as an amateur, there have been times when I wished I could record contacts, or send a station a sample of their transmission. Now, with the ever increasing popularity of PCs, it has become very easy to do such recordings. I have successfully captured audio and then e-mailed the file to the station which I monitored.

Most transceivers have a constant low 'audio out' connection (often one of the components of an auxiliary jack) which is independent of the volume control. It is simply a matter of taking the 'audio out' from the radio and connecting it to the 'line in' jack of the PC's sound card.

Software is usually supplied with the sound card (or operating system), which will allow monitoring of this input. Once you can hear the radio's audio coming

through the PC's speakers, it is then simply a matter of using a multimedia recorder to save the audio as a file.

It should be remembered that audio files can be quite large. For example, I took a recording of a transmission made by W4FLA and a 70 second recording at a sampling rate of 44100 Hz at 16 bits took approximately 12 megabytes of disk space. If you wish to e-mail your files I would suggest that the sampling rate be reduced as well as the bit size.

The above mentioned 12 megabyte file was reduced to 1.5 megabytes by lowering the bit size to 8 then 'ZIPPING' the file. I found that my e-mail server coped better with a 0.5 megabyte file.

As one radio amateur put it, this could now be the "Ultimate SWL Report".

ar

WIA MORSE PRACTICE TRANSMISSIONS

VK2BWI	Nightly at 2000 local on 3550 kHz
VK2RCW	Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm
VK3COD	Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz
VK3RCW	Continuous on 145.650 MHz, 5 wpm, 10 wpm
VK4WIT	Monday at 0930 UTC on 3535 kHz
VK4AV	Thursday at 0930 UTC on 3535 kHz
VK4WIS	Sunday at 0930 UTC on 3535 kHz
VK5AWI	Nightly at 2030 local on 3550 kHz
VK5VF	Continuous on 145.650 MHz, 5 wpm to 12 wpm
VK6RCW	Continuous on 147.375 MHz, 3 wpm to 12 wpm

possibly a year with the backlog, but eventually these courses would be conducted once or twice a year, possibly with regions working together.

Once you have achieved all outcomes, a Certificate of Training will be issued.

These training modules are in draft form until the end of 1999, allowing any input for improvements.

Comments can be sent to Trevor VK8CO at connell@topend.com.au.

ar

Contests

Ian Godsil VK3DID

Federal Contests Co-ordinator
25 Monaco Street, Mantona VIC 3194
E-mail: vk3did@eudoramail.com

Please Consider:

Space for information is always difficult in any magazine. That is why I give preference to VKs in results of international contests. Full details are available from me, or on the Internet at <http://www.wia.org.au> or <http://www.uq.edu.au/radiosport/>.

Contesting can be fun as well as challenging. Have YOU tried recently? Have your friends tried lately?

Please support your VK Contests in all ways that you can. You get the satisfaction of trying and the rig gets a work-out!!

Thanks this month to VK5OV, VK2BQS and VK3KW.

Results 1998 Novice Contest

Dave Myers VK2RD Contest Manager
18 logs received, including one SWL log.
(Posn\call\score\award)

1	VK4SM*	533*	Overall winner
2	VK4KTS/2*	465*	Highest Intermediate
3	VK3MGK*	309*	Highest Novice
4	VK2LEE	298	
5	VK7JGD*	246*	Highest VK7
6	VK3KQB	167	
7	VK4JAE	131	
8	VK2RD	115	
=9	VK3CAT	112	
=9	ZL3TX*	112*	Highest ZL3
11	VK5KMI*	109*	Highest VK5
12	VK6BIK*	104*	Highest VK6
13	VK2VZB*	77 *	CW Only Highest VK2
14	VK3NXY	65	
15	VK4WSS*	57 *	CW Only Highest VK4
16	VK2HV	45	
17	VK4LUV	38	
18	L40383*	269 *	Highest SWL

Participation was very poor this year and has declined from last year.

It appears that the "five contacts and move" rule is the major complaint. I shall remove this rule in 1999 and also request more publicity for this and other WIA contests. Ironically, the ZL and VK4 Sprints on the

Contest Calendar December 1998 - February 1999

Dec 5/6	ARRL 160 m Contest	(Nov 98)
Dec 12/13	ARRL 10 m Contest	(Nov 98)
Dec 26/27	Stew Perry Top Band Distance Challenge	(Nov 98)
Dec 26 - Jan 11	Ross Hull VHF/UHF Contest	(Nov 98)
Dec 27	RAC Canada Winter Contest	
Dec 31	ARRL Straight Key Night	
Jan 2/3	ARRL RTTY Roundup	
Jan 8-10	Japan International DX CW (Low Band)	(Dec 98)
Jan 9/10	Summer VHF/UHF Field Day Contest	(Dec 98)
Jan 9/10	HA DX CW Contest	
Jan 22-24	CQ WW 160 m DX Contest	(Dec 98)
Jan 23/24	REF (France) CW DX Contest	(Dec 98)
Jan 23/24	UBA (Belgium) SSB DX Contest	
Feb 6/7	YU DX Contest	
Feb 13	Asia - Pacific CW Sprint	
Feb 13/14	PACC DX Contest (CW/Phone)	
Feb 19-21	CQ 160 Metres SSB Contest	(Dec 98)
Feb 20/21	REF (France) SSB DX Contest	(Dec 98)
Feb 20/21	UBA (Belgium) CW DX Contest	
Feb 20/21	ARRL DX CW Contest	
Feb 21	High Speed Club CW Contest	
Feb 27/28	RSGB 7 MHz CW Contest	(Jan 99)
Feb 27/28	Jock White Memorial Field Day (Phone/CW)	(Jan 99)

same evening attracted more activity than the whole Novice Contest.

I was informed of a station who gave very high serial numbers, but no log was received from this station and his call only showed on two of the logs received. There may be stations who did not return a log because they thought that they had no hope of getting anywhere against that sort of score, eg one VK2 station who had quite a high tally but no log received. This sort of behaviour does not do well for the spirit of contesting.

Thank you to all who participated and to those who returned logs.

Results 1998 Australasian Sprints

David Box VK5OV.

Entries for the thirteenth series of the Australasian Sprints totalled six in the CW section and 21 in the phone section, both figures being rather disappointing.

The scores generally were very satisfactory, particularly as a few stations were operated QRP. Particular mention should be made of Peter Parker VK1PK (now VK3YE) who used a homebrew direct conversion transceiver with five watts output to an indoor 1.5 x 1.5 metre magnetic loop antenna. Also of note were the SERG club station VK5SR, which was operated on battery power and used a kite supported vertical antenna, and VK4JAE who, while on holiday in VK7, pulled off on the side of the road and recorded 12 contacts using a whip antenna.

Congratulations to the overall winners, Peter Nesbit VK3APN in the CW section and David Burnett VK5AXW in a very close Phone section.

This has been the tenth time I have been Contest Manager for the Sprints and it is the last. Someone else will take over next year. I sincerely thank those operators who have regularly entered one or both of the Sprints and without whom the contests would have flopped. In particular, I thank Alex Learmond ZL1BVK who has participated every year.

CW Sprint (Posn\Call\Score) VKs only

1	VK3APN	25 **
2	VK5NU	21 *
=3	VK5PO	20
=3	VK5XE	20
5	VK3DID	14
6	VK1PK/QRP	10 *

Phone Sprint (Posn\Call\Score) VKs only

1	VK5AXW	60***
2	VK5KCX	59
3	VK5PO	54
4	VK5SR	47*
5	VK5YX	42
6	VK5XY	39
7	VK2LEE	37
8	VK5AIM	31
=9	VK5TY	28
=9	VK5RV	28
=13	VK6NU	26*
17	VK7HX	19*
18	VK4JAE/7	12*
19	VK3DID	9*
20	VK5DUG/4	7*

Results of ANARTS WW DX RTTY Contest 1998

World Winners

(Call/Cat/Score)

CE8SFG SO 13,177,720
UT7Z MO 15,620,450
ONL383 SWL 2,080,740

VK World Placings

(Posn/Call/Cat/Score/Award)

3 VK2KM SO 10563075 1st VK2
34 VK5AI SO 2470824 1st VK5
69 VK2CTD SO 853664 2nd VK2
109 VK2SG SO 140988 3rd VK2
112 VK4ICU SO 95340 1st VK4
6 VK6GOM MO 4406832 1st VK6

Check Log from VK4CEJ

CQ World-wide 160 Metre DX Contest

CW: 22-24 Jan, 2200z Fri to 1600z Sun
Phone: 19-21 Feb, 2200z Fri to 1600z Sun

Object is to contact as many stations world-wide on 160 m as possible. VK to VK contacts are permitted for contest credit.

Categories are single and multi-operator. The use of packet, a spotting net, or logging assistant makes you multi-operator. Suggested DX frequencies are 1830-1835; W/VEs will usually operate outside this window. Look for Japan on 1907-1912.

Exchange RS(T) plus prefix or country abbreviation (VK). W/VE will send RST plus state/province.

Score two points for contacts with stations in own country, five points with stations in other countries in the same continent (boundaries as for WAC), five points for contacts with /MM stations, and 10 points with stations in other WAC continents.

Multipliers are US states (max 48); Canadian provinces (max 13); and DXCC and WAE countries. MM stations do not count as multipliers.

Final score equals the total QSO points times total multiplier (US states + VE provinces + DX countries).

Mail log and paper summary sheet (indicating CW or SSB on the envelope) to: 160 Metre Contest Director, David Thompson K4JRB, 4166 Mill Stone Court, Norcross, GA 30092, USA, by 28 February (CW) or 31 March (Phone).

Summer VHF-UHF Field Day

John Martin VK3KWA

9/10 January VK6: 0400z Sat - 0400z Sun.

Other Call Areas: 0200z Sat - 0200z Sun.

Because of the trial Spring VHF/UHF Field Day, the 1999 event will be called the Summer VHF-UHF Field Day and will be run on the weekend of 9/10 January, 1999. The Ross Hull Contest will be in progress at this time and all contacts can be counted for both contests.

Duration: (see above)

Sections and Awards: **A.** Portable station, single operator, 24 hours; **B.** Portable station, single operator, any six consecutive hours; **C.** Portable station, multi-operator, 24 hours; **D.** Home station, 24 hours. The overall winner will be the highest all-band scorer in Section A.

General Rules:

You may work stations within your own locator square. Operation may be from any location, including more than one location. Repeater, satellite and cross-band contacts not allowed. A station is portable only if its equipment, including antennas, is transported to a location other than the normal home location of its operator.

No contest operation is allowed below 50.150 MHz. Call on .150 and QSY. op. Recognised DX calling frequencies must not be used for contest exchanges or liaison. One callsign per station. If two operators set up a joint station, they may operate as multi-operator single callsign, or as separate single operator stations. Stations with more than two operators must enter Section C.

Exchange: RS(T) + serial number + your four-digit Maidenhead Locator.

Repeat Contacts: Stations may be worked again on each band after three hours. If a station is moved to a new locator square, repeat contacts may be made immediately. If a station moves back to a previous locator square, the three-hour limit still applies to stations worked from that square.

Scoring: For each band, score 10 points for each square in which your station operates, plus 10 points for each locator square worked, plus one point per contact. Multiply the total by band multiplier as follows:

6m	2m	70cm	23cm	13cm	higher
x1	x4	x7	x10	x13	x16

Total scores for all bands.

Sample Scoring Table:

Band	QSO	Locator	Multiplier	Total
	Points	Points		
2 m	120 +	280	x 4	= 1600
70cm	60 +	140	x 7	= 1400
Grand Total				3000

Logs for each contact must show time UTC; frequency; station worked; exchanges; points claimed.

Summary Sheet should contain: names and callsigns of all operators; postal address which applies to the callsign used; station location and Maidenhead Locator; section entered; scoring table; signed declaration that the station was operated within the rules and spirit of the contest and that the Contest Manager's decision will be accepted as final.

Send logs by mail to: Manager, VHF-UHF Field Day, PO Box 2175, Caulfield Junction, VIC 3161 by Monday, 25 January, 1999. Early logs would be appreciated.

Japan International DX Contest 1999

LF CW 2200z 8 Jan - 2200z 10 Jan 1999

HF CW 2300z 9 April - 2300z 11 April

Phone 2300z 12 Nov - 2300z 14 Nov

Object is to work as many JA stations + JD1 islands as possible.

Bands: LF CW 160/80/40; HF CW 20/15/10; Phone 80 - 10 (no WARC).

Categories: Single operator single/multi-band high power (more than 100 W o/p); single operator single/multi-band low power (less than 100 W o/p); multi-operator; maritime mobile.

General: Operate for maximum 30 hours only and show rest periods in log; single op must perform all tasks himself; single op may change bands at any time; multi-op must remain on band for at least ten minutes; multi-op may transmit on another band only if new station is a multiplier; ops may use spotting networks.

Exchange RS(T) plus CQ Zone number. JAs will send RS(T) plus Prefecture number (01 - 50). Score on 160 m four points; 80 m two points; 40/20/15 m one point; 10 m two points. Multiplier is total JA prefectures + JD1 islands worked (possible 50 per band). Multiply total points by total multipliers.

Logs (one per callsign) must show times in UTC; exchanges; multiplier first time worked; duplicate QSOs shown as no points; rest periods clearly marked; use separate sheet for each band. Send logs and summary sheet to JIDX Contest, c/o Five-Nine Magazine, PO Box 59, Kamata, Tokyo 144, Japan, by 28 February, 31 May or 31 December. Logs may be submitted on 3.5 inch disk in ASCII with summary sheet or by e-mail. For instructions send e-mail to jidx-info@ne.nal.go.jp with command #get jidxlog.eng or #get jidxlog.jpn.

REF (France) DX Contest

CW 0600z 30 Jan - 1800z 31 Jan

Phone 0600z 27 Feb - 1800z 28 Feb

Object is to work as many French stations as possible, including FG, FH, FJ, FK, FM, FO, FP, FR, FS, FT, FW, FY, TK, TM, and TO.

Categories: single operator; multi-operator one Tx; SWL.

Bands: 80 - 10 m (no WARC).

Exchange RS(T) plus serial number (French stations will send RS(T) plus department number or prefix). Score one point for stations in same continent; three points for other QSOs. Multiplier on each band is number of departments and overseas prefixes. Final score is total points by total multipliers. Awards to highest scorer each category each DXCC country. Send logs by mail to REF Contest, BP 7429, 37074 Tours Cedex, France by 15 March (CW) or 15 April (Phone). ar

How's DX?

Stephen Pall VK2PS
PO Box 93, Dural NSW 2158

Thank You and Goodbye

After almost seventeen years of radio amateur public life, I am very sad to advise you that this is my last *How's DX?* column.

A time comes in everybody's life when one has to change direction. That time has now arrived for me.

It is with a sad and heavy heart that I say thanks to all of you, the readers of this column. Thank you for the many encouraging letters which you sent me over the years. Thank you for your very solid support many years ago, when the future of this column was under threat, and thank you for your assistance and willingness to send me amateur news, comments, suggestions, information, DX news, hard copies of packet and Internet news, photographs and QSL cards.

Without your help this column could have not existed. Thank you for your phone calls, from Darwin and from Perth, from every capital city and from many of the small towns of our great country.

At the end of my monthly column I always acknowledged the call signs of those who assisted me in compiling the column in that particular month. To list now every call sign of those who assisted me in the past would probably fill pages of this magazine.

Yet, I still feel that some calls should be mentioned.

The late Percy Anderson VK4CPA and the late Ken Stevens VK5QW were solid supporters of this column, in more ways than just letters. I wish to say a special thank you to my friends VK2EFY, VK2KCP, VK2KFU, VK2TJF, VK2XH and VK5WO who regularly supplied me with hardcopies of packet and Internet DX News bulletins.

One Australian amateur, whom I do not want to embarrass by mentioning his call sign, even paid for many years the subscription to several overseas DX Magazines which arrived regularly at my doorstep. Another DXer regularly sent me photocopies of his logs for the interesting QSOs section of this column.

Why did they do it? Why did I write the column? Amateur radio is considered to be a hobby to be enjoyed by all those who practice it. One soon discovers that the biggest joy in amateur radio and DX is in the giving and sharing of knowledge of the hobby with others.

I enjoyed the hobby and the time I spent in writing this column for you, sharing with you all the news and happenings in the DX world. It enabled me to make many new friends over the air and by correspondence, friends whom I will probably never meet in person.

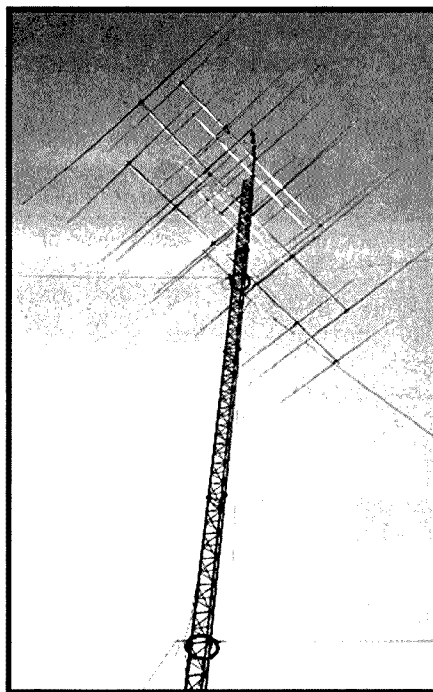
I hope that out there among you DXers there is somebody who will volunteer to take up the "DX Pen" as the new columnist. I feel that this column must not die, will not die, and will survive the difficult times which lie ahead.

Whilst I will not write this column in the future, I still intend to write DX orientated articles for *Amateur Radio*. I hope you will support me in this endeavour.

It is now December, the end of the year and the time for festivities. I wish you all the joy of Christmas and the joy of giving. I also wish you a happy and healthy New Year, good propagation and the thrill of working a new country or a new island. Thank you again. I will miss you all!

Campbell Island - ZL9CI

The DXpedition team of 11 members will sail from Wellington, NZ on 1 January 1999 in a 125 foot vessel named "Braveheart" which was used previously as a Japanese research vessel.



The "old tower" at the rural QTH of Jakko OH1TX.

The voyage will take approximately six days. It is expected that the six stations will be on the air around 10 January, depending on the weather which can be unpredictable at any time. The last QSO will take place around 24 January. The team will operate from 160 to 6 m, on SSB, CW, RTTY and maybe SSTV.

Amsterdam Island - FT5Z

An FT5ZH DXpedition press release issued by Jeffrey WA6KBL states that the DXpedition to Amsterdam Island is on schedule, and there are no problems so far.

The equipment was tested, the antennas assembled, checked and disassembled, and everything was well packed to depart from Marseilles on a ship to Reunion Island on 5 October. The operators prepared their personal belongings and departed by plane for Reunion early in November.

They plan to visit several of the resident Reunion operators during their five day stay on Reunion. They will supervise the loading of the equipment aboard the vessel "Marion Duffresne".

En-route to Amsterdam island, the ship will stop at both Crozet and Kerguelen but the DXpedition will not operate from these islands.

They planned to arrive on Amsterdam Island on 25 November and expected to have all antennas erected and operational on 27 November. They will operate around the clock as much as they can until their departure on 25 December. They will have a much shorter journey back and expect to arrive home in Lyon very late on 31 December.

All QSLs must be sent direct to the F6KDF Radio Club with one "green stamp" or two IRCs with reply envelope. The address is: Rhone Alpes Gendarmerie, 292 Route de Genas, Quartier Raby, F-69677 Bron Cedex, France. Bureau cards will also be accepted but it will take a long time before the reply comes.

Pratas Island - BV9P

Operating from Pratas Island is difficult because of the political sensitiveness and the military importance of the island.

Over the past few months there have been rumours that an amateur radio activity is likely to happen. The latest prediction was for October; however, it did become a reality in mid-November for seven days.

The twelve operators, most of them well known Taiwanese DXers, also included JA1BK Kan, KU9C Steven, OH2BH Martti and the first YL ham on Pratas, XE1CI Nellie. The usual DX frequencies were used from 160 to 10 metres, including WARC, on CW, SSB and RTTY. QSL to KU9C Steven M Wheatley, PO Box 5953, Parsippany, NJ 07054, USA.

Myanmar - XZ

A few days after the Pratas BV9 activity, another restricted country opened up for amateur radio.

A press release issued by Dan Brown NA7DB advised that XZ1N would return to the airwaves from 21 November 1998 through to 6 December 1998. The activity will take place from Yangon, Union of Myanmar.

Most of the team are members of the Central Arizona DX Association which includes some of the members of the 1996 activity. It will be a multiple station operation from 160 to 10 m, including the WARC bands, on CW, SSB and RTTY. There will be entries in the CQ WW CW contest and the ARRL 160 m contest.

Members of the team are NA7DB Dan, WA6CDR, K6RKE Darryl, AF7O Sally, KM5EP, WY7K, N7RZD and N7DB Mike. QSL direct via W1XT Robert M Myers, PO Box 17108, Fountain Hills, AZ-85269, USA, or via the Bureau.

Eritrea - E3

Zoli HA5PP re-appeared on the air, not from Yemen 7O as everybody expected him to, but from an equally rare country, Eritrea.

He operated from the Hotel Ambassador, Asmara as E30HA on SSB with a TS-50 and a 30 m long wire antenna. As at the beginning of November it was reported that he made 7000 QSOs. He planned to return to Eritrea to take part in the CQ WW CW contest. QSL via HA5YPP, PO Box 1157, Budapest, H-1245, Hungary.

Jacky ZL3CW (formerly F2CW) was also in Eritrea in a professional capacity and operated, when time permitted, with the callsign E31AA. Jacky reported that he received a letter from the Ministry of Transport and Communications saying that amateur radio is allowed in Eritrea from 21 September 1998, but the cost of an individual licence is \$US500. QSL via ZL3CW Jacques Calvo, PO Box 593, Pukekohe, Auckland, 1800, NZ.

The latest group to visit Eritrea was the "Space A DX Group" between 5 and 17 November. The callsigns were allocated when they arrived in Eritrea starting with the call E30AA and up.

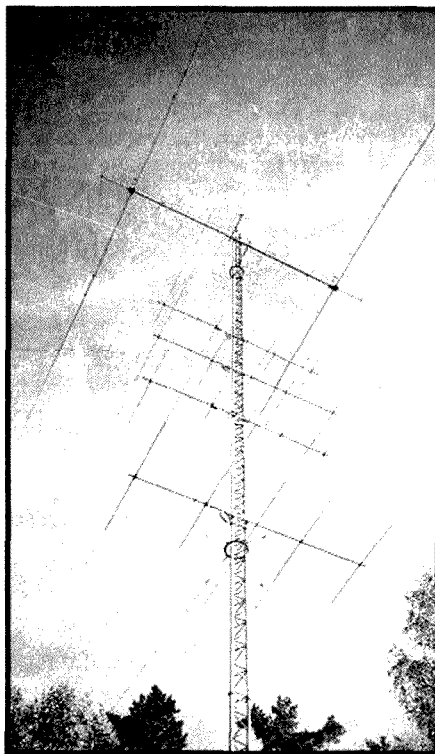
The team of ten amateurs, Bruce WD4NGB, Joe KO4RR, Vance N5VL, Elvira IV3FSG, Max I8NHJ, Michel EA8AFJ, Slavek OK1TN, Mike N9NS, Larry NF6S and Franz DJ9ZB operated three stations on all bands, 160 to 6 m on SSB, CW and RTTY, and used standard DX frequencies operating split. They planned to use only one call, unless they are told to use the individual callsigns for which they each paid \$US500. Direct QSLs will go to INDEXA c/o K4JDJ, 556 Babbtown Road,

Suffolk, VA-33434, USA. Bureau cards should be marked E30xx via K4JDJ. Insert correct suffix in place of xx.

Finn Antenna Farms - OH1TX

I had an enjoyable short visit from Jakko OH1TX in Sydney late in October. Jakko is well known among DXers for his strong signals and is heard with a good signal strength in Australia.

During our discussion the matter of towers came up as an interesting topic. Many of us have seen pictures and QSL cards and had contact with Finn amateurs talking about their "weekenders" in the country and talking about their antenna towers which, by our standards, seem to be the "ultimate" dream of an HF amateur radio DXer.



The "new tower" at the rural retreat of Jakko OH1TX.

I learned a few interesting facts about the Finn radio amateurs. Finland lies in the north eastern part of Europe, between Russia to the east and the Gulf of Bothnia in the west. It has a population of almost five million people in an area of 338,127 square kilometres. Its size is about 42% of New South Wales, which has an area of 801,600 square kilometres.

In the past, most of the Finnish population lived in the country on food producing farms scattered among extensive forests and many thousands of lakes. Due to industrialisation of the economy, the farming population moved slowly into the towns and cities, and many of the older generation passed away.

This is the reason why many Finn city dwellers have a "farm" or "weekender" in the country by way of inheritance from parents or relatives.

Jakko OH1TX, who has two other calls, OH0TX and 7J1ATX, is also the proud owner of such a farm, on which he produces no food, just amateur antennas. The enclosed pictures tell the story.

Jakko has two towers. The "old tower" is 36 m high and is a rotating guyed tower, manufactured by OH8QD from Sotkamo. It has four mono-band Yagis for 20, 15, 10 and 6 metres.

The "new tower" is 45 m high (147 feet). It is also a rotating tower made of hot galvanised steel. On the top there is a two element linear loaded 75/80 m homebuilt Yagi on an 11 metre boom. Each element of this Yagi antenna is 30 m long.

Underneath the 80 m Yagi there are five over five element 15 m and 10 m Yagis. The third picture is a view from the top of the tower. It shows the end of the 11 metre boom and one of the elements.

Jakko's rural QTH is about 40 km from his home town Turku on the Baltic Sea.

Now here is another interesting fact about the situation in Finland. In answer to my question as to whether he had to submit a development application, building permit application, engineer's drawings and calculations and other requirements to the local authorities to get permission to erect the tower and the antenna, Jakko stared at me and gave a simple answer. "Why? There is no need for a building permit. The towers are in a rural area and are officially classified as a temporary construction, because they can be dismantled."

Now you know, why the Finns have such magnificent antennas on those high towers.

Rowley Shoals September 1999 - Update

I reported this IOTA DXpedition in the November issue of *Amateur Radio*. I have had some requests for Malcolm VK6LC's e-mail address. Here it is: vk6lc@inet.net.au.

The internet Web page manager is Maurizio Bertolino and the Website is (new reference) <http://www.425dxn.org/dxped/vk6lc/>.

The original budget estimate was \$AUS20,000 and it was intended to land 10 operators with dual stations on to the Shoals. This has been now revised with a shared boat charter for \$AUS10,000 which will land four operators on the Shoals. The duration of the expedition will be approximately five and a half days, starting Tuesday, 21 September 1999.

The RSGB IOTA Committee is one of the early major sponsors of the DXpedition with a special loan of a Yaesu FT-900AT

transceiver and power supply. Further early sponsors are the Diamond DX Club, Italy; Waasland Radio Club, Belgium; G3NUG, I1HYW, ON4XL, ON4IZ, I1SNW, G3ALI and VK3ATN.

One hopes that, as time passes, the number of sponsors will grow. The above Web page is constantly updated as changes or news occur. Further update news will also appear from time to time in other DX magazines. QSLing will be direct from Gianni Varetto, I1HYW, PO Box 1, 10060, Pancalieri, Torino, Italy.

Future DX Activity

* **Nigeria - 5N.** Bogdan SP5CPR is on the air again until the middle of December as 5N3CPR. He prefers cards via the QSL Bureau to his home call SP5CPR.

* **Madagascar - 5R.** Andre F6AOI, Alain F6BFH and Bernhard F9IE will be active from Madagascar until 7 December. Ake SM7CIP is already there and on the air as 5R8FU, and is currently putting up antennas for 160, 80 and 40 metres. He was heard on 28485 kHz around 1315 UTC. QSL via SM0DJZ.

* **Isle of Man - GD4.** Steve G4UOL will be active as GD4UOL from 20 November until 4 December. QSL via the GD QSL Bureau.

* **Dominican Republic - H18.** The Bavarian Contest Club will be on the air as DL1HCM/H18 from 24 November until 6 December, mainly on CW taking part in the CQ WW CW DX Contest on 28/29 November. QSL to DL1HCM via the Bureau or direct to Mike Peters, Moisinger Allee 72, 23558 Luebeck, Germany.

* **Kiribati - T3.** Two German amateurs, Karl DL1VU and Gerhard DJ5IW, will be active in the area from Canton Island as T31AF, from western Kiribati as T30CT, and from Banaba as T33VU. Other planned activities depend on transportation facilities. All QSLs via the Bureau for T32IW, via DJ5IW for T32VU, all others via DL2MDZ.

* **France - TM5.** Look out for the TM5CW special CW contest call from 27 November until 7 December.

* **Cocos-Keeling - VK9VC.** Hide JM1LJS will be on air from the 26 December until 2 January as VK9CL on 80 to 10 metres. His new direct QSL address is: Hideyuki Kai, 4-22 15 Takata Higashi Kohoku-ku, Yokohama City 223-0063, Japan.

* **Lord Howe - VK9L.** The five member DX group under team leader Nick VK2ICV was active from here from 22 November until 1 December. Their main activity was during the CQ WW CW Contest with two stations on all HF Bands. The callsign was VK9LX and QSL goes via VK2ICV Nick Hacko, PO Box 730, Parramatta NSW 2150.

* **Reunion Island - FR.** On 18, 19 and 20 December a group of amateurs will be active from "Piton des Neiges", an island off Reunion with an altitude of about 3069 metres. A special call TO150 will be used by ten operators using CW, SSB, and RTTY on 160 to 2 metres celebrating the 150th anniversary of the abolition of slavery on Reunion Island on 20 December 1848. A special QSL card will be available.

* **Congo - TN.** Hazel AL7OT is back in the Congo, after many years of absence, with the callsign TN7OT, doing missionary work. Her home is in Soldotna, Alaska. She operates 100 watts SSB with a dipole antenna. Although she is using amateur radio to contact friends in Soldotna, I suspect, as happened a few years ago, she will be inundated by DXers who want to contact her as a new country. QSL via home call.

* **Bahamas - C6.** Abaco Island, IOTA NA-080, will be activated from 8 to 16 December by five USA operators with the special call C6DX from 160 to 6 metres. The main focus of this trip will be the ARRL 10 metre contest, and maybe propagation possibilities on 6 and even on 2 metres. QSL via WZ8D to John Walker, 1930 Meredith Ln, Loveland, Ohio, 45140-7216 USA.

* **Bolivia - CP6.** Mats LU9AY will be active as CP6/LU9AY from 25 November until 6 December. QSL to his new home address, 670 Honorio Pueyrredon, Zip 1405, Buenos Aires, Argentina.

* **Kerguelen - FT5X.** Helios FT5XN will be active again in January 1999. QSL to F6PEN.

* **Indian Ocean - VK9X - VK9C.** Charlie W0YG, W8UVZ and K9FD will be active between 6 and 13 February 1999 as VK9XX from Christmas Island and from 13 to 20 February as VK9YY from Cocos Keeling Island. They will concentrate on 80/160

metres, the WARC bands, RTTY and some 6 m activity if there is an opening.

* **Palau - T8.** Dave KJ9I, Rudolph NF9V, and John NZ9Z will be on the air from 8 to 17 December as T88II. QSL via KJ9I David Schmocker, N 7298 Country Trunk Highway, F. Oconomowoc, WI-53066-9040, USA.

Interesting QSOs and QSL Information

* **GD4PTV** Brian - 21300 - SSB - 1230 - Sep. QSL via Brian W Brough, Kimmeragh View, Ballacorey Road, Ramsey, Isle of Man, IM7 4AW, United Kingdom.

* **8Q7US** Yu - 28479 - SSB - 0527 - Sep. QSL via JR2KDN Y Yoshida, Kato Building, 4F, 529 Rokugaike, Kita, Nagoya, 462 Japan.

* **6W1RD** Mary - 14154 - SSB - 0825 - Sep. QSL via PO Box 3749, Dakar, Senegal, Africa.

* **TL9A** Alex - 18069 - CW - 0605 - Sep. QSL via PA3DMH, Alex van Hengel, Schoener 85, 2991 JK Barendrecht, Netherlands, Europe.

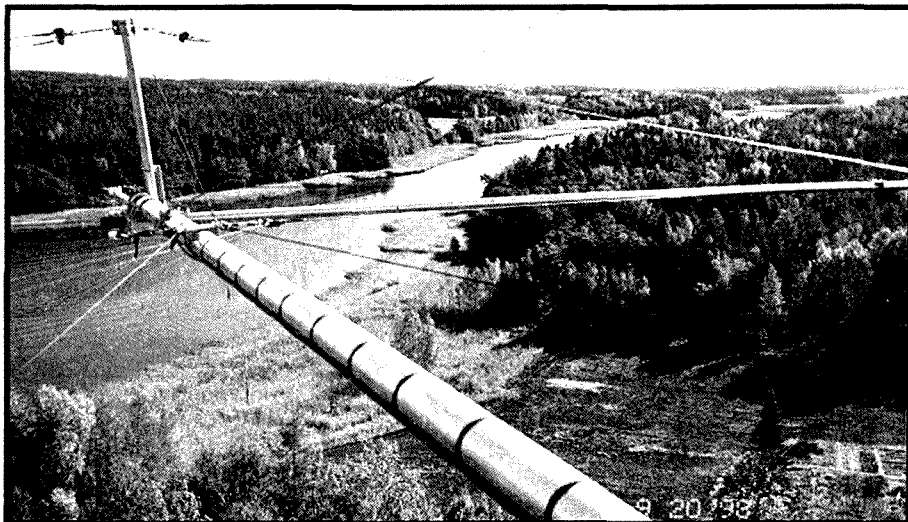
* **JW9OI** Olav - 14016 - CW - 0948 - Sep. QSL via LA9OI, Olav Gurendal, Kolsaastien 20, N-1352, Kolsaas, Norway.

* **A35ZL** Manfred - 14024 - CW - 0707 - Oct. QSL via DJ7RJ, Manfred Przygode, Hoisdorfer Landstrasse 50, D-22927, Grosshansdorf Germany.

* **CN8GI** Ahmed - 14164 - SSB - 0553 - Oct. QSL via the Bureau or direct to: Ahmed Boudda, PO 6543, Rabat 10101, Morocco, Africa.

* **YM75DS** Selim - 14205 - SSB - 0530 - Oct. QSL via WA3HUP, Mary A Crider, 2485 Lewisberry Rd, York Haven, PA-17370, USA.

* **ZP5WBM** Luis - 14250 - SSB - 0601 - Oct. QSL via Luis Albero, Alvarez R, PO Box 512, Asuncion, Paraguay.



Part of the massive 11 m antenna boom, 45 m above ground, at OH1TX.

* **PJ9B** - 14171 - SSB - 0540 - Oct. QSL via K2SB, Stephen P Branca, 202 Minnetonka Rd, Hinella, NJ-08083, USA.

* **C4A** - 14175 - SSB - 0636 - Oct. QSL via 9A2AJ, Tomislav Polak, Brace Domany 6 19, HR-10000, Zagreb, Croatia, Europe.

* **CQ9K** - 7092 - SSB - 0727 - Oct. QSL via CS3MAD, Associaçao de Radioamadores Madeira, Edif Prt Cível, Quinta Magn - P-9000, Ilha da Madeira, Portugal.

From Here and There and Everywhere

* **New Zealand - ZL4**. Ed K8VIR/ZL4 is back again in New Zealand. However, he gave W8WC as his QSL manager.

* **Juan Fernandez - CE0**. Brian VK5FV reports that he received a direct QSL reply within five weeks from CE0ZIS Eliazar Jose Pizarro Rojas, PO Box 1, Juan Fernandez Island, Chile.

* **DX Association**. The International DX Association supports many DX operations in countries having limited or no amateur radio activity. Membership fee of the association for a year is \$US15.00 and should be sent to Box 607, Rock Hill, SC-29731 USA. Besides helping the DX fraternity you will also receive a quarterly newsletter.

* **Martique - FM**. If you worked Josep FM/EA3BT, or Nuria FM/EA3WL, and/or TO8B during the CQ WW SSB Contest, send your cards to Josep Gibert, Col-Regi, 1, 08800, Vilanova i la Geltru, Spain.

* **Andaman and Nicobar Islands - VU4**. It was reported by Ted W2FG that Nat VU2NTA is making another attempt to try to obtain permission for a VU4 activity. Nat said that there are many difficulties with the application and Government sources are not very supportive of the application. Nat further states that non-Indian operators will not be allowed under any circumstances.

* **Tokelau - ZK3**. Ron ZL1AMO did not operate as ZK3RW from the island due to transport problems.

* **Christmas Island - VK9X**. Jack HB9TL and Erwin HB9QR were active during October and November from Cocos-Keeling as VK9CTL and as VK9CQR, and from Christmas Island as VK9XTL and VK9XQR. QSL for both activities to HB9QR Erwin Fink, Toedistr 7, CH-8572 Berg, Switzerland with an SAE and two IRCs or two "green stamps" (postage is expensive from Switzerland).

* **Latvia - YL**. Latvian amateurs used the special prefix YL80 in October and November, celebrating the 80th anniversary of the foundation of the Republic of Latvia on 18 November 1918.

* **Arabian Nights - JY**. As propagation improves, old DX Nets re-appear. Zedan JY3ZH's "Arabian Night Net", which is

active each Friday, reappeared at around 14251 kHz and was quite audible in NSW around 0630 UTC. Quite a number of African and middle-eastern stations checked in, among them Dr Sid ST2SA who had quite a strong signal. His QSL address is Dr Sid Ahmed Ibrahim, PO Box 1533, Khartoum, Sudan, Africa.

* **Canada - Special Prefixes**. Canadian amateurs are commemorating the 75th Anniversary of the first two-way transatlantic exchange between amateur radio operators. Between 1 and 31 December they will use the following special prefixes: CG1, CG2, CF2, CG3, CF3, CG4, CG5, CG6, CG7, CG8, CG9, CJ1, CJ2, CK1 and CK2.

* **Equatorial Guinea - 3C**. Alan 3C5I advises that his correct QSL address is Alan Isaachsen, c/o Mobil Equatorial Guinea, PO Box 139082, Dallas, TX-75313, USA.

* **ITU Special Event**. W0AIH has activated N98ITU in connection with the ITU conference which took place from 12 October to 6 November in Minneapolis, USA.

* **Yukon - VY1**. The special event station VY1A celebrated, during October and November, the 100th anniversary of the Yukon Territory "Gold Rush". QSL via KB5IPQ.

* **South Shetland - LU1**. The Argentine Antarctic Jubany Base is located at Mayo Island (King George Island, lat 62° 14' south, long 58° 38' west) and is on the air with the call sign LU1ZJ. QSL via Direccion Nacional del Antartico, Arrito 1248, Buenos Aires, Argentina.

* **St Helena Island - ZD7**. Desmond ZD7DP on St Helena Island has a new QSL Manager, W1ZT, who has the logs for all QSOs. His address is George Johnson W1ZT, 30 Washington St, Beverly, MA-01915, USA.

* **Kiribati - T3**. HA9RE and HA8IC are planning to be active between January and 15 March on CW, SSB and RTTY, 160 to 10 m.

* **QSL Manager**. Gianni Varetto I1HYW, PO Box 1, 10060, Pancalieri, Torino, Italy is the QSL Manager for the following stations (direct only): UA0X/EK250RA, 4K4/EK250RA, YB5NOC, N7UJN/A (NA-169), R3RRC, 4K3RRC, 4K4RRC, 4K5RRC, 4K4/UA9OPA, 4K3WQ, 4K3GW, 4K3/RW3GW, UW1ZZ/A, RW9OWM/0, RZ1AZO/1, 4K3/RA3YG, JI6KVR/6, LU3CQ/D, AZ1D, VK61SL, VK81SL, and T12LAK/HP4.

* **QSL Manager**. Koos KK3S advises that he is QSL Manager for TA2PE, Y1IFLY, ZS6Y, ZS9F, and Y11HK. He is not the QSL manager for TU2XZ, WP2Z and Y10EB. Koos' address is Koos Berrevoets KK3S, 160 Valley Road, Windsor, PA 17366-8904, USA.

* **QSLs Not Acceptable by the Bureau**. Carl W3HC (formerly W3HCW) has

directed the US W3 QSL Bureau to destroy all the cards which they receive for him as QSL manager. He is a QSL Manager for many DX stations, but he only QSLs direct!

QSLs Received

* **H40AA** (2 m - OH2TA), * **CY9AA** (3 m - K7BV), * **N6MZ/KH9** (2 m - N4XP), * **9H0A** (3 m - LA2TO), * **ZK2CK** (3 m - HB9BCK).

Thank You Again

Many thanks to all my supporters during these many years. Your support made this column possible. For this month special thanks are due to VK2EFY, VK2KFU, VK2TJF, VK2XH, VK3DID, VK4LV, VK5FV, VK5WO, VK6LC, KK3S, INDEXA (International DX Association), *Ohio/Penn DX Bulletin*, *QRZ DX*, *The 425 DX News*, *The DX News Sheet*, *The DX News Magazine* and the *DX Magazine*.

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(continued from page 7)

and COM 2 is dedicated to packet, COM 3 to Internet and Com 4 to SSTV or Contesting. But a quick disconnect of COM 2 was simple.

It worked. I sat reading WIAW on 14 MHz with no problem. The interface would probably work with most other programmes such as HAMCOM, CW500, etc.

The transmitter part is also easy, but perhaps we should leave that for another issue. In the meantime enjoy other people's telegraphy.

My sincere thanks to Trevor VK2TT who was part of the inspiration to build the decoder.

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NEW AR ADDRESSES

Please note that the postal and e-mail addresses for all material for Amateur Radio magazine, including Hamads, have changed!

So have the telephone and fax numbers!

See the new details in column one on page 1 of this issue!

Spotlight on SWLing

Robin L Harwood VK7RH
5 Helen Street, Newstead TAS 7250
Tel: 03 0344 2324
E-mail: robroy@taoeta.net.au

Budget Cutbacks

Well, another year is rapidly coming to a conclusion. There have been several developments this year, with further cutbacks in budgets causing the inevitable reduction in programming or services.

For example, the Swiss and the Chinese have terminated their broadcasting agreement after the Swiss transmission facilities were severely reduced to a solitary sender. Berne now is heard via Germany.

Radio France International supposedly cut back their programming to one sender per

region yet I am hearing them still on several frequencies. Presumably they are targeting different regions.

Digital Technology

Also, this year we have had further experiments with digital technology over HF. Recent tests were carried out from Palau which is a former US trust territory off the Philippines. However, receiving technology has not been produced in mass quantities to take advantage of any possible broadcasts.

Continuing rivalries exist over which system should become standard. It is felt by some analysts that HF digital broadcasts would not be viable economically as other delivery methods have gained more of a foothold such as the Internet and satellite television sub-carriers.

News Programs

Many listeners over short-wave primarily tune in the latest news and current affairs.

To cater for this continuing demand, both the BBC World Service and the VOA instituted so-called "rolling" news formats. The VOA "News Now" program replaced existing VOA English programs or absorbed them into narrow program slots.

There has been some criticism of the presentation and production of the latter, yet

the news is not something you can control. It just happens.

The BBC World Service did announce they, too, were going to introduce a second stream devoted to news and current affairs, but it has not started yet. A date is expected to be announced very soon.

Tune to 13 Metres

The higher frequencies have burst into life as the number of sunspots dramatically increase. Users are increasingly going higher in frequency and are being rewarded with good propagation and excellent reports.

The 13 metre broadcasting segment between 21450 and 21800 kHz is producing some outstanding signals in our evening hours. For example, I am hearing Radio Ukraine International from Kiev on 21510 between 0800 and 1300 UTC to Australasia and Asia. It is in Ukrainian mostly, with English taking up the final hour.

On 21590 kHz there is Radio Exterior Espana from 0930 UTC from Madrid. On 21745, Radio Prague from the Czech Republic is heard in English between 1000 and 1030 UTC with very good signals.

Radio Austria International is in German, French and English on 21765 kHz from 0900 whilst Norway can be heard on 21800 with Norwegian and Danish.

Home Brewers Corner

Build your own linear amplifier! We can provide you with all the essential hard to get components. All components are brand new and high quality, some are even used in our own Emtron amplifiers.

Linear Amplifier Parts:

- 3-500z ceramic sockets.....\$49
- 3-500z Power Transformer.....\$150
- 3-500z filament transformer.....\$50
- 470 uF, 450V Hitachi electrolytic capacitor.....\$19
- PC board for power supply module.....\$11
- 4 pole-9 pos ceramic.....\$49
- RF Filament Choke.....\$20
- RF Plate Choke.....\$20

2kW Antenna Tuner:

- 3 kV high quality variable capacitor.....\$95
- 2 Pole x 11 Position ceramic switch.....\$59

1 kW Antenna Tuner:

- 1500 V high quality variable capacitors.....\$60
- 1 Pole-11 pos. ceramic switch.....\$39
- 300 pF/1500V.....\$60
- 2 pole-11pos. ceramic (2Kw).....\$39
- 4 pole-11 pos. ceramic (2Kw).....\$59
- 6 pole-11pos. ceramic (1Kw).....\$36
- 2 pole-5 pos. ceramic (1Kw).....\$25
- SWR Meters-moving coil meter.....\$10

Various Components:

- 10uF-5000V Bosh oil filled capacitors.....\$69

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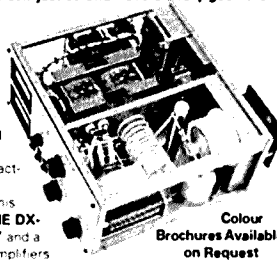


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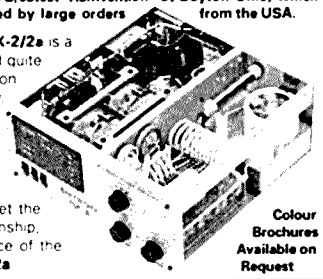


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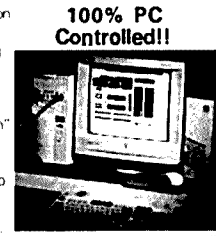
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EMTRONICS

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Website: <http://www.emtron.com.au>

Oddly, there is a station on 21850 kHz and it is, surprisingly, the Vatican Radio broadcasting to Latin America. However, the levels do vary as, I think, beam headings are changed for different target areas. It is not a harmonic. A short 10 minute English newscast is heard at 1120 UTC on weekdays. On Sundays, at 1100 UTC, there is a broadcast of the Pope reciting the Angelus in St Peter's Square. It lasts for about 10 minutes.

Merlin Network

Tuning around lately, I have frequently come across a station broadcasting pop and disco music. This is from the Merlin Network in London.

You will recall that Merlin manage all the senders in the UK and overseas for the BBC World Services.

Merlin has now gone into broadcasting in their own right after a test period when they were on-air each Wednesday from 1800 to 0600 UTC. They are on 24 hours a day, seven days a week from transmitters in the UK, Ascension Island, Singapore and Thailand.

There are also reports that they are also being broadcast from Sackville in Canada, yet this would be strange as Merlin does not operate the Sackville site. Perhaps it is part of one of the numerous exchanges Merlin has with other international stations using UK and Singapore.

Merlin's programs seem to come from commercial and independent producers in the UK, such as Radio Caroline. Some inexperienced monitors have been fooled into thinking that is the identity of the station after hearing that ID. The best frequency locally to hear Merlin is 21550 kHz from 1000 UTC.

Spurious Signals

As the propagation increases, so does the number of spurious and harmonic signals from lower frequencies. Many of the technical departments would not be pleased to hear that these are being heard.

For example, I did hear a station on 19060 kHz which happens to be a future broadcasting allocation. However, as the Chinese speaking program was clearly from America, I decided to ascertain if it was a harmonic. Sure enough, the same program was on 9530 kHz and I now know that it is the VOA from their Philippine relay site.

This same location is also responsible for harmonics on 14240 and 14250 kHz at odd times. Intruder Watch Co-ordinators have lately been fielding reports on them. It will be interesting to try and hear harmonics above 30 MHz. They are there when the propagation is very good.

Harmonics

Talking of harmonics, there was a very red faced Canadian ham who started getting reports of his 80 metre CW transmission around 2100 UTC on 24 October.

His third harmonic came out exactly on the frequency of the rare transmission of Radio St Helena on 11092.5 kHz. I think he may have had more listeners than the actual signal from the South Atlantic island. Signals again were patchy and they did not make it to this region.

Passport to World Band Radio 1999

I received my copy of *Passport to World Band Radio 1999* today from America. This edition has articles on the troubles of broadcasting from Liberia, Sri Lanka and Bangladesh.

The book is clearly designed for novices interested in using World Band radios for the first time. It is aimed clearly at the consumer. There are receiver reviews and an extensive hour by hour guide to International radio. There is also quite an extensive frequency database in the back of the book. However, you will probably need a magnifying glass to find the information. The book is really written for North American audiences.

World Radio and Television Handbook

The World Radio and Television Handbook recently had a change of publishers and editors. For many years this book was regarded as the "Bible" of Radio and Television stations. However, it was more like a telephone directory and with about the same appeal. I prefer *Passport to World Band Radio*.

Klingenfuss has also entered the ring with the *Klingenfuss Shortwave Frequency Guide* which will be available about the middle of this month. He also has a CD-ROM of Frequency Listings for both Utility and Broadcasting Stations.

If you are interested in any of the above publications, I recommend that you contact Padula Books at 404 Mont Albert Road, Surrey Hills VIC 3127; telephone 03 9898 2906.

Prices will vary, depending on when they come in. I obtained my *Passport* direct from Grove Enterprises in the States.

Well, that is all for this year. Until next time the very best of listening and 73. ar

Pounding Brass

Stephen P Smith VK2SPS
PO Box 361 Mona Vale NSW 2103

I cannot believe it's Christmas already. Where has the year gone? It seems I was saying the same words only a few weeks ago!

I would like to say thank you to the readers who send me letters, articles and requests for information. It just goes to show that Morse is still very much alive and well, and will be around for a long time.

I have decided to hold back on the article intended for this issue, as I had overlooked some important information and did not want to publish it as it was not 100% correct. I apologise for this oversight.

I would like to take this opportunity to wish you all a very merry Christmas and a prosperous New Year. ar

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Another Sputnik Replica in Orbit

As I write this column, a new Sputnik replica has just been launched. I have been listening to its signal on two metres. The recorded messages came through loud and clear. It had only been launched a matter of hours earlier and was flying along with MIR.

I was having lunch when I noticed that MIR was coming into view. On connecting to the PMS, I downloaded a message from Miles Mann WF1F regarding the launch of the second Sputnik replica. My tracking system indicated a Doppler shift of about -3 kHz and, on re-tuning to 145.809 MHz, the signal from the little satellite was heard at S9. Its batteries are designed for a 30 day life so perhaps it will still be transmitting as you read this column.

There is yet another Sputnik replica on board MIR and it is anticipated that it will be launched sometime early next year as the MIR spacecraft comes near the end of its mission. These Sputnik replica exercises have created a lot of interest in amateur ranks but their prime purpose has been educational. They were designed and constructed by educational groups in Europe and many schools have been monitoring their progress.

SEDSAT Experiences Problems

Following a successful launch, this satellite apparently has developed a major power drain problem. It appears that two primary systems, solar panels and batteries, are not performing to specifications. SEDSAT-1 has experienced several negative power cycles during its short time in orbit.

Several stations are attempting to uplink to SEDSAT-1. The primary objective is to establish an uplink to the satellite and then upload a new code necessary to allow changes in the flight parameters. Many amateurs around the globe have been sending telemetry reception reports to the SEDSAT Team. Reports should be sent via email to telemetry@seds.org.

AMSAT National Co-ordinator

Graham Ratcliff VK5AGR

E-mail: vk5agr@amsat.org

AMSAT Australia Net

The AMSAT Australia net is held on 80 and 40 metres LSB each Sunday evening. During daylight saving time in South Australia the net is on 7068 kHz +/- QRM with an official start time of 1000 UTC (with early check-ins at 0945 UTC). During the rest of the year, the net is on 3685 kHz +/- QRM with an official start time of 0900 UTC (with early check-ins at 0845 UTC).

AMSAT Australia Newsletter and Software Service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand, and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

'AMSAT' Australia

GPO Box 2141

Adelaide SA 5001

Keplerian Elements

Current keps are available from the Internet by accessing the AMSAT FTP site, <ftp.amsat.org> and following the sub-directories to "KEPS".

PANSAT

PANSAT, the Petite Amateur Navy Satellite recently launched from the space shuttle Discovery, is apparently alive and well as it continues to orbit the Earth.

It carries a spread-spectrum communication package fabricated by student officers and faculty members at the American Naval Postgraduate School. Dan Sakoda KD6DRA, PANSAT Project Manager, said that while naval officers had a major role in the development of the spacecraft, the actual users of the small satellite will be Amateur Radio operators.

The Naval Postgraduate School is using ham radio in a purely educational endeavour. In return, the amateur radio community will have a new resource to investigate spread-spectrum techniques. It is expected that PANSAT will enter service shortly (better bone-up on spread-spectrum techniques!).

Phase 3D Undergoes Successful Thermal-Vacuum Testing

In late October 1998, the Phase 3D satellite spent the best part of a week in a critical test of its space-readiness. Whilst in a vacuum chamber it was subjected to five cycles of

alternately broiling and freezing. Then the temperature was allowed to stabilise and the test chamber was brought up to atmospheric pressure.

On inspection, Phase 3D did not appear to be any the worse for wear. Karl Meinzer DJ4ZC, President of AMSAT-DL, said that, "The test has been extremely successful".

A few things will need to be corrected, but that was the purpose of the test. There were no major failures and no irreversible problems. AMSAT's engineering team will be analysing their test data over the next few weeks to fully understand the spacecraft's performance during the test.

MIR Anniversary

It's hard to believe, but amateur radio activity on board MIR is 10 years old. On 6 November 1988 amateur radio gear was first activated on board the Russian spacecraft.

Over the past decade more than 60 Cosmonauts and Astronauts have made thousands of radio contacts with radio amateurs in just about every country of the world. We are very fortunate to have had the opportunity to take part in this exercise and also to be able to look forward to continued amateur radio activity on the forthcoming International Space Station.

International Space Station News

According to Frank Bauer KA3HDO, AMSAT-NA Vice President of Human Spaceflight Programs, "We are proceeding full speed ahead on Amateur Radio aboard the International Space Station."

The initial installation on the ISS will allow the crew to operate on voice, packet and digital voice beacons right from the time that the station is occupied. The hardware is scheduled to be flown on the STS-96 mission in May 1999. Antennas will be taken up and installed shortly thereafter. It is planned for the first crew to begin living on ISS in late 1999 or early 2000.

This very early installation is an indication of the esteem that amateur radio operations have attained in the world of human space flight. It is due also in no small part to the efforts of people like Frank and his team who have been working very hard to integrate the amateur radio activities with the crew's recreation complex. The future looks very exciting for amateur radio in space.

Next Month

The twice-yearly (January-July) update of what's up, what's down, what's working and what's not in the amateur radio satellite field. Keep those antennas pointing UP!

ar

Repeater Link

Will McGhie VK6UU

21 Waterloo Crescent
Leamurdie WA 6078
E-mail: will@v6als.faroc.com.au

Wall to Wall Pirates

I sit here listening to the pirate activity on 29.120 MHz, the gateway frequency on our two metre repeater VK6RLM. The 29 MHz system has a normal mute on the 29 MHz receiver so any signals on 29.120 MHz are re-broadcast onto two metres.

As the sun spot activity increases over the next few years this can only get worse and a CTCSS mute will have to be fitted to the 29.120 MHz receiver. This, unfortunately, will limit amateur activity incoming on 29.120 MHz, as few HF amateur transceivers are fitted with CTCSS encode. However, there are few options and CTCSS it is before too much longer.

What has stirred me up is the amount of pirate activity on our 10 metre band and the regulations relating to 29 MHz gateways.

Firstly the pirate activity. It has been suggested we move the 29 MHz gateway to another frequency, so I tuned over the 29 MHz segment allocated to gateways. It did not matter what frequency I tuned to, there was pirate activity. And it is pirate activity! The nature of the signals are non-English speaking but the style of operating is not amateur. The "QSOs" are only of a few words between "overs". Callsigns, even in another language, have a repetition about them that an amateur would recognise.

These signals are short and almost like giving instructions. It has been said that some of the pirate activity could well be taxi traffic and/or fishing boats from some place or places north of Australia. Whatever the source of the activity, it does not look good for our 10 metre band. We could well lose the band due to sheer weight of numbers making the band unusable!

This pirate activity started me thinking about the regulations we have to adhere to in relation to 29 MHz gateways. It was a protracted struggle (four years) to be allowed to put gateways on 29 MHz and, even then, only with considerable limitations.

Only three channels were allocated and the gateways are not allowed to link to one

another. While we, as law abiding amateurs, are required to limit our experimentation on the 29 MHz band, for reasons that escape me, the 29 MHz band is being lost to pirate activity. At least the last amateur standing will have stuck to the letter of the law and, when the last amateur abandons the 10 metre band, the regulations will be no longer needed. Seems a silly way to get rid of the regulations, but we won!

The 29 MHz Gateway material has been put together, along with additional information, and sent to the WIA Liaison Team to argue the linking regulation limitation with the ACA. I will keep you informed of progress or otherwise.

40 m Gateway

Here is an update on the 40 metre Gateway idea. To refresh your memory, our local repeater club applied for a Gateway licence on 40 metres SSB.

Similar to the 29 MHz Gateway, a single 40 metre SSB frequency would be gatewayed onto a two metre repeater. This would allow those amateurs, who, for several reasons, could not access 40 metres, access via 2 m FM. The ACA turned down the licence application.

It is hoped the WIA will be able to meet with the ACA and argue the case for allowing 40 metre gateways.

The original proposal has been sent to the WIA Liaison Team, along with the ACA refusal and other additional material, to bring the Liaison Team up to speed. Even though the original proposal had input from FTAC and support from the VK6 WIA, it did not have direct input from the WIA Liaison Team. It is hoped the WIA will be able to meet with the ACA and argue the case for allowing 40 metre gateways.

Climbing

How does your repeater club do its maintenance on towers? There is a never ending need to replace antennas or install new ones on repeater sites. The problem is that we are all getting older and, with few exceptions, there are no new young amateurs. Sure, there are a few, but with so few young people becoming amateurs, and from that few not many who are prepared to climb towers, we are having increasing difficulties in maintaining our repeater sites.

One of our Perth sites has had a faulty antenna or coax for almost two years. The

2 m repeater has been running on a standby antenna installed along with the original antenna over 15 years ago. Despite pleas for help in climbing the 30 metre mast and sorting the problem out, there have been no offers.

What will happen when we are all over 60 and unable to maintain our repeater sites? Perhaps this problem is largely restricted to VK6 but I would like to hear from the rest of Australia. Is this a growing widespread problem or not? Is VK6 the only state getting older?

Staying in Bed

Ever had one of those days where staying in bed would have put you in front?

I have been modifying a piece of two metre equipment for a WIA VK6 news link between Perth and one of our country repeaters. The original equipment that is still in service has needed replacement for some time and I started to build the replacement some four years ago.

It was one of those projects that was not needed in a hurry but four years was becoming ridiculous, so I put it back on the bench and refreshed myself with the progress of the modifications. This can take a while as remembering back four years and why you did a particular thing is difficult. However, the modifications and design concepts had been drawn onto computer, so before too long the soldering iron was running and components were being installed.

All was going well until a simple mistake in the placement of a component resulted in the direct FM modulation of the transmitter not working as it should. I spent several hours trying to find out what was wrong. I even swapped the exciter board, but for a different reason (it was not an exact replacement) the transmitter would not work.

The original exciter board was re-installed and a couple of hours later I found my mistake. So simple, when I found I had placed a resistor wrongly!

I had looked at the circuit many times but not noticed the mistake. Most of one day was wasted all because you see what you want to see and not what is really there!

Once the problem was rectified, the equipment was well under way and, hopefully, before too long the replacement link will be ready to go into service.

WIA Web Page

I had a good look over the newly established Federal WIA Web page and was impressed. The page has been put together by Richard VK2SKY and contains a vast amount of real information.

Many Web sites might look good but take a lot of clicking from page to page and, at the end of it, there has been little real information.

To give you an example, the site may be about amateur radio and mention is made of, say, band plans but the actual band plans are not on the site. Detailed information is missing. The Federal WIA home page is worth a visit as it contains a vast amount of information about Amateur Radio in Australia, with particular reference to the WIA.

This source of information is a fantastic research tool. I have been involved directly with WIA matters for several years now and have found it difficult to find out information relating to past and present WIA policies. This is not to say the information is not available but it can take a lot of time to obtain it.

How much time you can spend on WIA matters varies greatly between individuals. Sometimes you may give up due to a variety of factors when perhaps you may have succeeded had the information been easier to find.

The Internet really can be very useful. For a start it is available to all if they choose to become connected. But you actually don't have to be on the Internet to use some of the information. Any Web site, like the Federal WIA page, can be sent to you on a computer disk.

Provided all the information and related links are on the disk you have access to the Web site just the same as if you were connected to the Web. And what is so great

about Web pages is they are so easy to use. If you can read you can navigate a Web site and use the easy-to-find information. A number of mouse clicks takes you from page to page and it is fun to use. I hope more information relating to the WIA is placed on the Federal pages, perhaps WIA policy and motions that have been passed. I'm often asked what is the WIA's policy on a particular topic and at times have difficulty finding precise information on that topic.

The WIA, in my opinion, is a vast bureaucracy that can best be served by easy access to information. Without accurate information the bureaucracy can defeat the amateur giving up his or her time to become part of Divisional Councils or Federal positions.

Well done, Richard, on the Federal WIA Web site and in particular the time you must have spent to construct the site. It must have taken many hours (perhaps hundreds) to reach this point. I know I put together the VK6 Web page and it took me an hour or two each day for several weeks to get the basics running, followed by an average of one to two hours a week every week from that time on. This is why some amateurs don't have time for Amateur Radio.

The Federal WIA Internet site can be found at www.wia.org.au.

Did You Know

● The WIA National QSL Collection may be inspected at most times by appointment. Phone 03 9728 5350. The collection, arguably the largest in the world, is located at 4 Sunrise Hill Road, Montrose, Victoria. There you will be able to inspect one of the most complete prefix collections existing, as well as 24 volumes of DX QSL cards of superior quality from every DXCC country in the world. There are also Pre-war, Thematic and Pictorial Collections.

● You can obtain, free of charge, a photostat copy of a QSL card. These can be most useful if you wish to write an article on the history of amateur radio.

● If you are an SWL you can inspect our pre-war SWL QSL collection and a few modern SWLs of superior design.

● Certain parts of the collection are on loan to Radio Clubs and other interested bodies for exhibition.

Ken Matchett VK3TL

ar



radio and Communications

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When you've finished building the 20A switch-mode shack supply from this month's story, what next? Well, how about some good old HF mobile? Look, the bands are hopping at last, the sky is clear and blue... and Terlin's new *Outbacker Outreach* antenna is really unbelievably good! We put this 12ft whopper on the car, and worked the world!

December's R&C is simply jammed with value and quality reading for amateur radio operators! Like these...

- CONSTRUCTION: the final part of Phil Harman's remarkable switch-mode supply. From junk parts!
- ANTENNAS: that vital part, the Earth. Build an *elevated* Earth system and surprise yourself! From VK6VZ
- 1999 DXCC List. A lift-out wall chart giving all the latest countries, deletions and additions. By VK9NS
- A LINEAR FOR AUSTRALIA! Neil VK3ND checks out Emtron's DX-1 linear. Smaller for Oz. Great stuff!
- CONSTRUCTION: build a superheterodyne HF receiver in steps. Part 1, by Harold Hepburn, VK3AFQ
- As usual, we have our three DX columns and lots more... the best stories and regulars every month!

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All times are UTC

Another year

This issue commences the 30th year of my compilation of these notes. Many changes have occurred in the VHF/UHF world since that fateful(?) day in 1969 when the first of these notes was typed. Likewise, many changes have occurred in the methods of preparation and final printing of these notes for your reading.

Thank you for the continuing support so many of you give me. Your efforts have made my task easier.

Big Antennas

Dave Collins K2LME provides a list of two metre "big guns". There may be others.

Antennas are number-of-Yagis x number-of-elements-per Yagi, except F3VS which is six wavelengths, element count unknown; and VE7BQH is a collinear.

W5UN 48x17, K5GW 48x10, IK3MAC 30x19, SM7BAE 24x20, KB8RQ 24x19, KR5V 24x10 (ex KN6M), SM5FRH 24x18, F3VS 24x6wl, WB5LBT 24x17, VE7BQH 384 elements, WORWH 16x19, 12FAK 16x18, WA9KRT 16x17. All run 1500 watts out.

Beacons

Chas VK3BRZ thanked me for a report on the continuing reception of the two metre VK3RGL beacon. He said: "I rely on on-going reports like yours in order to gauge its health. The antennas could fall down and I wouldn't know it by the strong signal at my place. Whilst on the subject of beacons, the Mount Gambier 70 cm beacon is a real ripper here. There's never a time I can't hear it, and often it's at S3-4. It only needs a sniff of an opening to hit S9."

Last month I hoped for room this month to feature points from the President's Annual Report of the West Australian VHF Group.

The following portion from the report features the VK6 beacons and should interest many readers, even those overseas.

One of the Group's core functions is the provision of VHF/UHF/SHF beacons. This

year has seen an exceptional amount of activity, presided over by Don Graham VK6HK and Wally Howse VK6KZ, who have been literally involved in everything.

VK6RPH and VK6RBU continue to give sterling service, but sadly an era came to an end when the tower at Busselton on which the VK6RBS antennas were "piggy-backed", was condemned. Fortunately, our equipment was recovered successfully. Some will be re-used, but the UHF varactor multipliers are now somewhat obsolescent.

Al Edgar VK6ZAY has been commissioned to use his expertise to produce a state-of-the-art 1296 MHz transmitter, which will be band plan compliant. This will be installed at the existing VK6RBS, if possible, or failing that, somewhere else in the State.

Steps were already well advanced on the construction of a set of modern replacement 144/432/1296 MHz "South Western" beacons, intended for Augusta. These are essentially complete, thanks to the usuals plus Al VK6ZAY (1296 again) and Terry VK6ZLT (antennas). All that remains is to find a suitable site.

That makes the second time this year that the US has been worked -

The Group has also helped with the transmitter for VK6REP on 144.568 MHz at Esperance, which is looked after by Bill Hockley VK6AS, plus transmitters on 50.308 and 144.564 MHz for the Albany beacon VK6RTW, which is hoped will soon be operational under the auspices of the Southern Electronics Group, probably from the King River QTH of Tom Reed VK6TR.

There is considerable interest in again having a two metre beacon in Kalgoorlie. A suitable transmitter has been readied in anticipation.

Looking north, the Exmouth beacons are ready for installation, with 50.304 and 144.576 MHz equipment on site. A licence has been issued for the two metre frequency, but unfortunately six metre approval has been delayed. This beacon should give good early warning of international six metre openings.

Hopefully it will also stir up two metre interest from South East Asia, as well as northern Western Australia. Thanks to Rex Wiggins VK6RAW and Rick Kowalewski VK6XLR, for looking after the local arrangements.

In virtually every case, Don VK6HK has built the keyer, and converted the "prime mover".

On the SHF front, the 10.368 MHz beacon, with transmitter constructed by Neil Sandford VK6BHT, and antenna by Trevor Niven VK5NC, is undergoing integration and testing by Wally VK6KZ. Investigations into the feasibility of the 5.6 GHz beacon transmitter are being undertaken by Al VK6ZAY. Tom Berg VK6ZAF has agreed to manufacture a prototype antenna, and Don VK6HK is once again producing a keyer/VHF exciter.

So, with all the present and projected activity in VK6, coupled with active beacons in VK5 on 52, 144, 432 and 1296 MHz, 2.4, 3.3, 5.7 and 10 GHz, plus the beacons in Mount Gambier, the western half of Australia is well equipped with beacons, all within a reasonable distance of most of the population.

50 MHz Opening to the US

Ron Graham VK4BRG reported that on 26/10 at 0050 he worked K0GU in DN70 Colorado. Signals initially were marginal, but peaked 5x9 each way at 0053. K0GU was still audible at 0129, a 39 minute opening and the only station he worked. K0GU worked VK4DO at 0056 and later he was heard working Brisbane stations.

John VK4KK advised that he, too, worked Jay K0GU on 26/10 at 0122 5x7. Others in the Brisbane area to work Jay were VK4APG at 0117 and VK4KJL at 0120. John said that at the same time six metres was open to YJ8, ZL and VK7 by Es, so probably the US station arrived with the addition of an Es extension.

That makes the second time this year that the US has been worked - signals were into VK2 on 1 January.

Commenting on the opening, **Steve KL7SIX** sent an e-mail:

The following extract from the six metre propagation logger has interesting connotations from a DX working perspective. In this case it was non-critical DX, but I wonder how, in the future, we will validate serious six metre attempts and records if people choose to splatter the results all over DX clusters.

Whatever happened to the true DXer who relied upon wits, operating ability and know how? Now to get a new country in W7 you monitor 147.060 where the DX is broadcast by a mechanical voice; all you need is a two metre handi talki.

Whilst one cannot argue at the merit of spotting six metre DX for all the US to see, I think putting signal reports on the cluster is a no no and could compromise a DX contact just like posting signal reports over 28.885.

I strongly recommend you work the DX before you spot it because I imagine most DX chasers would have no compunction in jumping on to the channel and calling the guy.

Consider the posting below, all on 26/10:
00:40 de N6XQ - worked five ZL3s, all SSB. ZL3NW loudest peak 5x8. 00:42 de N5TSP- ZL video in/out...bitchin' day for six...whew!

00:55 de K0GU - DN70 VK4BRG 5x9! 50.110.

00:58 de K0GU - Also VK4DO 50.110 (poppy2.verinet.com)

01:09 Both VK4s now calling CQ on 50.125.

01:11 You must have a pipeline, Jay. Nutin' here de N5JHV.

01:14 de K0GU - Just me and the two VK4s so far. Now back at 50.110. 01:19 Not a thing here...WOLD...DM78...Jay, do you still have them? (hd79-124.hil.compuserve.com)

01:22 de K0GU - three more VK4s, opening moving a bit west.

01:25 de K0GU - Still in, some now on CW.

01:26 de K0GU - VK4KK 50.125 (poppy2.verinet.com).

01:36 What beam heading Jay? VE7AGG CN89.

01:36 de K0GU - Still in weak. Didn't realize the footprint of the opening would be so small! (poppy2.verinet.com).

01:37 de K0GU - Beaming straight at 'em 255 degrees.

01:46 de K0GU - All gone now. My first opening ever, cool.

Comment from Jay K0GU: *Since I've only been on the band since 1995 this was my first TEP opening. Didn't really expect an opening this far north with a solar flux of only 108. I didn't hear anything earlier in the day when the southern US was working South America on backscatter. The opening lasted about 40 minutes and seemed to have a small footprint. The VKs only seemed to be hearing me. VK4BRG was the strongest, peaking at S9.*

Mike ZL3TIC reports that at 2350 on 25/10 six metres opened from ZL3 to W6, and he worked N6XQ. Other stations to work N6XQ were ZL3ADT, ZL3NW, ZL3AAU and ZL3TLG. Also at 0230 26/10 49.750 strong, 49.7480 also in. Mike was hearing weak signals on 50.110 but said these could have been JAs. N5JHV also reported as being worked by ZL3s.

1/10: *Another opening into the US at 0100, K6QXY was in for about 10 minutes. He was very weak and worked ZL3NW. He tried to work ZL3TIC and ZL2KT but was lost. The 35 MHz pagers were very strong. Also KL7SIX heard ZLTV.*

Scott VK4JSR said there was a large JA opening on 30/9. Started approximately 0600 and was still open seven hours later at 1300. All JA call areas worked. JA pile-ups heard working VR2, 9M2, KH2 until 1300. VR2XVD heard 1/10 on 50.140 working JAs. V73AT worked at 1140.

19/10: 1230 49.640 MHz 5x1 - Alaskan DARN Radar frequency - very scattered signal, with strong carrier and a rapid, strong 'buzz' like video. Beam heading from VK4 (QG62nm) was between 20 - 30 degrees. Could this have been AU with a TEP extension? Very unusual propagation considering this is 2230 AEST! JA beacons and 49.750 MHz TV between 1215 - 1308.

Also, there was quite a flutter of interest on 22/10 when a report came through that VK6AOM in Buntine had worked IK2QDX at 0705 on 50 MHz. However, it turned out to be a misinterpreted message by the sender as the contact took place on 10 metres!

Still, if it didn't do anything else, it awakened a few operators to the fact that they need to watch six metres for the unexpected.

Steve KL7SIX advises his itinerary: 21/12 QRT in KL7 and until 3/1/99 QRV in VE7. Then flying out until 12/1 QRV in San Diego W6. Until 17/1 operating as 7J1BAX central Japan districts 1/2/3/4. 18-19/1 in HL1. 21/1 back to VK3 and SIX beacons reactivated.

... there was a large JA opening on 30/9 was still open seven hours later . . .

At present Steve is using a TS-680s and a JHV seven element Yagi and operates daily on 28.885 from 2300 using 500 watts. ZLTV is very consistent, particularly from 2300 to about 0200, heard on 27-28-31/10, with slow fade characteristics of F2 propagation.

The following items from *Internet Six News* courtesy of Geoff GJ4ICD.

3/10: F2 into Europe, many ZS6s, FR5, V51 and Z22 into GU, GJ, G, F, EA, I and DL etc. HH6PA also worked LU and PY: W8 to HC, LU, PY - first LU to TZ. Worked LW5EJU and seven other LUs between 2024-2036. Also worked LZ1SJ and LZ1QE at 1332-1334. 73 Lany TZ6VV.

3/10: ZS report: A nine hour F2 opening! Band opened around 1100 with good signals to G, ZS6s on and there was still strong EU video and weak 50 MHz beacons from Mediterranean area to 1930. Peter ZS6PT (ex-ZS8MI) reported hearing or working more than 20 countries during the opening. TL5A was in again after several days absence due to poor propagation. Thanks to Italian stations for standing by when asked and giving us a chance to work further north. 73 Hal ZS6WB.

JA report from JA1VOK: Okinawa guys reported that PY2OZF, PY2NQ, PY5AG,

PU2MZI, PY2HDY and ZP6CW were worked at least by 7J6CCU, JR6VSP and JR6HI in PL36 paradise at 0245-0331. ZP6CW 5x9 was worked for the first time this cycle. However, in JA homeland, A35SO (Op: DJ4SO) later appeared on 50.110 SSB 5x9 at 0338 (worked Claus on 50.120/split at 0342) and was heard until 0535 here. Surprisingly PY, ZP and A3 in spite of solar flux of 112. Then I spoke with Val UN3G 5x9 on 28.885 at 0539 but failed in six metre contact. UN3G may be soon from JA.

4/10: Global news: 0000 PY to HP, J3, YV and ZP: 0300: PY to JA; JA to A35 and V63: 0700: KH2 to VR, BV, HL. Later ZS6 into DL and IT9; 1130: FR5 into UK, V51 and TZ6 into IT9.

5/10: PY report: Very interesting propagation. Worked CT4, EH7, EH8, CT3, D44, 3C5I, 9H1, etc. Later, I heard WP40 and others WP4 stations, also TI, YV, 9Z4. The best was Hawaii, first time this cycle: Ted NH6YK 5x3. Also copied KH6HI/b on 50.065. 73 Peter PY5CC.

10/10: Band open most of the afternoon, mostly to EA. Band re-opened to Mediterranean area just after sundown and shortly afterwards an Es extension gave us access to central Europe with quite a few DL, G, LX, ON stations worked by the ZS6s. OK1FFD also popped up briefly to give a new one to a lucky few. 73 Hal ZS6WB.

10/10: Worked three new countries: 4Z5JA, HH6PA and TZ6VV. Worked also: ON4ANT, ON4GG, KP2A, NP3HU, LUs, PYs, EH8s, CT3s. Worked 36 countries in Cycle 23 now. 73 Leo PP1CZ.

11/10: VK report from Scott VK4JSR: 48.250 MHz EU TV Video S1-2 at 0845 - 0900. Worked several G stations on 28 MHz with S5 signals but no one on 28.885 MHz! Also noted that GJ4ICD copied 46 MHz TV at 0830. 12/10: 48.250 MHz EU TV S4 between 1100 - 1145. 14/10: EU 48.250 MHz TV in again last night 1000 - 1100. Very weak at RS 41, but it has become a regular indicator each night this weak. G and GW stations were up to 5x9 on 28 MHz from 0945 up to 1030, then rapid drop in signal strengths.

17/10: ZS report: Good day to Mediterranean area with a number of DL, G, HB9, OE, PA stations contacted locally. Ivo ZS6AXT also worked OK and Z3, two new ones for him and the first Z3-ZS QSO that I know of. My highlight of the day was after calling CQ, finding US5CCO in the pileup for country #104. Many stations active in 9A, CT, EH, F, I, LZ, S5, SV, YO, YU giving the ZS6 stations a real treat. Again the band was open late and 5B4, OD and SV beacons were still strong at 2000. 73 Hal ZS6WB.

JA1VOK reports that Joe 7J7ACX was formally KG6JDX, and 7J1AEJ/7 is former Joe KG6DX. Both are now active on 50 MHz

from Misawa US Air Force Base in Aomori, QN00, northern Japan.

21/10: **GJ4ICD** report: 0700: VK 46 MHz video; 1130 Es to IT9, then 1430 3C video, TU2OJ, TZ6VV, ZS6XJ ZS6WB plus the two ZS6/b and V51KC into much of UK/GJ as far north as IO93. (1430z to 1530z approx).

Rod VK3DQJ reports on six metre activity in and around Melbourne: *The early morning weekday net (2100 - 50.120 then up) seems to be very popular some mornings. Although I am a recent addition to the net, at times I have noted up to eight to ten stations.*

Even though the boys up north have been working some form of DX, it has been fairly quiet down the southern part of VK. I can now listen below 50 MHz and our Asian friends can be heard all the way up to above 40 MHz most days. (And I thought 10 metres was bad!). I understand the pagers (35 MHz) from "the states" have also been heard in Melbourne.

14/10: 0630 49.750 video and JA6YBR/b were extremely strong. A very intense TEP opening occurred into JA, lasting, on and off, for approximately three hours. At my QTH, nearly all signals were well above S9 and with very little QSB. Stations heard operating were VK3ATQ, VK3CAT and VK3AMZ. During the opening, 48.240 and 48.260 were also heard. JAs working the V63 on 50.130.

15/10: Very little activity. JA2IGY/b was in and out of the noise for awhile around 0330 - 0350.

Two Metres and Above

Guy VK2KU reports: *It has been a quiet winter but spring has now definitely arrived in the Blue Mountains. The path to VK4 on 144 MHz continues to elude me due to mountain ridges to the north, though I often hear Trevor VK4AFL in the noise working Gordon VK2ZAB.*

Regular contacts to the south and south-west on 144 MHz include Warren VK3BWT, Rob VK3EK, Bob VK3AJN and Bill VK3AMH. On 5/9 at 2238 I was surprised and pleased to work Roger VK3XRS/p at Eagle Point (south of Bairnsdale) (5x2, 5x1) for my longest non-duct 432 MHz contact so far (about 540 km), particularly as I am only running 25 watts at present with no receive pre-amp.

Then on 19/9 at 2309 I worked VK3EK 4x1 on 432 MHz, also earlier at 2304 VK3DUT in Bumberrah on 144 MHz. Since then the following have been added - 24/9: 2210 VK3AJN 5x2 on 432 MHz; 26/9: 2129 VK4AFL 5x3 on 144 MHz; 09/10: 2244 VK3AQU 4x1 on 144MHz.

Grid Squares

Guy VK2KU suggests the following: *By way*

of encouragement to ourselves and others, why don't we run a league table of grid squares worked on 144, 432, and 1296 MHz? Higher bands could be added if desired.

We would need a volunteer, probably from among ourselves, to correlate the information. My access to e-mail is not frequent enough for me to do it, and in any case running the reflector is my contribution. The Table could be published every three months, perhaps in Eric's column in Amateur Radio magazine if he is agreeable.

I suggest that we are not assiduous enough in exchanging QSL cards to include figures for grid squares confirmed in addition to those claimed as worked. In any case the 'VHF and up' scene on .100 and .200 generally sees most contacts made 'in public', so how about just "grid squares worked" ?

To start the ball rolling, my own current figures are: 144 MHz: 37, 432 MHz: 11, 1296 MHz: 3. Respectable on 144, but a long way to go on the higher bands.

... why don't we run a league table of grid squares worked on 144, 432, and 1296 MHz?

To conform with the WIA Grid Squares Award, contacts should be from 1 January 1990.

Any support for the idea? Who will volunteer to correlate the data?

From Steve VK3OT: I agree with the grid locator incentive. Disagree with start date. Contacts on all bands occurred prior to award start date so should be back dateable and include 50 MHz. Australian amateurs are the most reticent when it comes to giving out grid squares during QSOs. Most of us would not even know how many squares we worked in VK on 50 MHz as most cards don't give details.

The Ross Hull Memorial Contest runs from 26/12-11/1/99. See last month's Amateur Radio for details.

Six Metre Repeaters

Steve Blanche VK2KFJ has been attempting to provide a reliable list of six metre repeaters throughout VK. It is not an easy task but he has established that the first seven repeaters are operational as listed, the others their present status.

53.600 VK3RMR Gippsland, 10/98
53.625 VK2RSN Newcastle, 07/98
53.675 VK2RMB Sydney North, 11/98
53.725 VK4RGA Central QLD 01/98

53.725 VK4RLB Brisbane Sth 01/98
53.750 VK5RDX Adelaide Sth 01/98
53.800 VK6RAP Roleystone, 11/98 - suffers QRM from pagers
53.925 VK8RDX Darwin 10/98

53.550 VK2RIC Lismore, off air, transmitter fault 10/98
53.550 VK2RSJ Sydney West, defunct, scrapped.
53.700 VK2RGN Goulburn, under construction, 04/98
53.800 VK2RMS Cooma, under construction, 10/98
53.850 VK2RWI Dural, under construction, 10/98

Anyone with additional repeaters or information is asked to advise Steve at his e-mail address steveeb@towertechnology.com.au.

Aurora News

Spectacular auroral displays were noted over a wide area, in both hemispheres, on 7, 8 and 9 November. The following may be the reason for the auroras.

DXLC report: The geomagnetic field was quiet to very severe storm on 8 November. A strong solar wind shock was observed at 0420 UTC at SOHO. This was the arrival of the CME associated with the 5 November major flare. The disturbance from this CME peaked between 0600 and 0900 UTC when the planetary three hour A index reached 203. Solar wind speed ranged from 429 to 673 km/sec.

Solar activity was moderate. Solar flux was 152.7, the planetary A index was 68 (3-hour K indices: 5786 4323, Boulder K indices: 5675 4323). Region 8375 doubled its areal (superficial extent) coverage and should be capable of producing several further M flares before rotating over the west limb on 11 November. An isolated X flare is a possibility as well.

Region 8377 developed slowly and was quiet. Region 8378 gained a few spots but was quiet. Region 8379 was quiet and stable. Region 8380 decayed into spotless plage (unusually bright region on sun). Regions 8381 (a reversed polarity region) and 8382 were quiet and stable. New region 8383 was numbered as it rotated partly into view at the southeast limb. ... **DXLC report** courtesy of **Geoff GJ4ICD**.

Referring to the aurora, the following reports were received:

On 7/11 **Steve KL7SIX** reported that, following an alert from **Steve KL7FZ** of impending conditions, at 0300 a visual auroral display occurred. Up to 0542 stations in Alaska, Canada and USA (W0 and W7) were very strong, many with characteristic auroral sound.

On 8/11 **KL7SIX** was working stations to

near 6000 km by Es + AU; VE4-8, W7, KL7 worked. From sunset visual auroral conditions.

Steve **KL7SIX** sent a report from *The USA Cluster*, which gave a blow-by-blow description of events on 9/11 with reports from 0629 to 0942. Too much detail for this column, but the entries covered auroral events in KL7, VE4-8, W7, Russian video, VE beacons. It's there for those who seek the details.

A Pointer for the First EU to KL7 Maybe?

First significant reception of 49.750 TV was reported in KL7 on 8/11 by Steve KL7FZ at 0816 and still there at 0940. Reception was from north west aimed at visual AU display and signals on 49.7499 and 49.7542 were heard as well as other weaker offsets. Beam heading was 345 degrees and Au multi-path doppler was observed. Range we estimate at 1500 to 2500 miles and probably Asian offsets. During this event the magnetometer dipped extremely negative. Did anyone hear anything?

Rather excited at the discovery of the north-west path to European Russia - it has everyone scratching their heads. ... de KL7SIX.

Trevor VK5NC

8/11: The 144 MHz band has been open from 0730 until approx 0835. The propagation involved was auroral backscatter and signals were coming from the south east approximately 150 degrees from Mount Gambier.

Stations worked were VK1VP, VK2KU and VK2ZAB Sydney, VK2TWR, VK3CAT, VK3BWT (Mallacoota), VK3EK, VK3DUT, VK3AFW, VK3HY, VK3JEG, VK3TMP.

The signals were very rough and hard to copy and there was some QSB as the curtain was shifting. There were no VK7 stations heard during the opening.

9/11: The fabulous two metre band was open again via auroral backscatter, the signals coming from the south east and some were very strong. Stations worked were VK3TMP, VK2TWR, VK3BWT, VK3XPD, VK2KU, VK3AFW; VK3HY and VK2KU on CW. The band opening lasted about two hours and was very noisy some three hours later.

The Aurora Australis must have been very intense as it is optically visible tonight in the southern sky. Six metres was very active as well and several stations along the southern coast of Australia in VK3, VK5, southern VK2, VK1 and VK7 were heard on both bands.

Tony VK3CAT

8/11: From 0619 worked VK5BC and VK3DUT on six metres. Worked VK1VP and

VK3DUT on two metres. Heard VK2TWR, VK2KU, VK3EK and VK3ZQB on two metres. Beam heading 150 degrees.

Rod VK2TWR

Auroral opening commenced 0630 9/11 and worked VK5NC and VKRTMP.

Ron VK3AFW

My log of stations worked and heard is as follows:

8/11: 0648 VK1VP 472 337; 0709 VK3DUT 57 57; 0713 VK2RBC 432; 0715 VK3EK 57; 0723 VK2KU 45 54; 0745 VK5NC 52 42; 0749 VK2TWR 43 55; 0752 VK3BWT 41 51; VK3CAT, VK3BJM, VK3HY, VK3TMP, VK3ATQ, VK3ZLS heard.

9/11: 0708 VK5NC 5x5; 0714 VK2TWR 5x7; 0716 VK3BWT 5x1; 0727 VK3ZQB 5x3; 0733 VK2KU 511; 0746 VK3EK 5x4; 0804 VK7JG 4x3. Heard but not worked: VK7XR, VK5DK, VK1VP, VK3HY, VK3TMP, VK3XPD and VK3ATQ.

The fabulous two metre band was open again via auroral backscatter

Barry VK3BJM

8/11: I have never heard auroral reflections before, so last night's event was quite an ear-opener for me.

Tony VK3CAT, called on the phone at 0700 to warn me something was happening. Managed to work Norm VK3DUT 5x7 on 144.100. Norm's signal was best understood 1 kHz up.

Also heard VK3ZQB, VK3EK, VK2KU, VK2TWR and the Nimmitabel two metre beacon, before the dinner-gong sounded.

Managed to record on tape the contact between Ron VK3AFW and Russell VK3ZQB. A friend will recreate it as a .WAV file, so other inexperienced ops (like me) can have some idea of what to expect.

Called Max VK3TMP, and amongst others, I believe he worked a very loud VK5NC, and heard a VK4, but Max couldn't make out the last three letters of the call. Anyone from VK4 have an idea who he might have heard?

Gavin VK3HY

8/11: 0710 50.200 VK7KXA 49 49; 0723 50.200 VK3DUT 57 57; 0749 144.100 VK5NC 45 46.

9/11: 0711 144.100 VK5NC 55X 55X; 0715 50.200 VK7KXA 56 59; 0726 50.200

VK7XR 54 54; 0730 144.120 VK7XR 54X ??? QSO incomplete; 0734 50.200 VK7KXA 53 53; 0748 50.200 VK7JG 55 45; 0800 50.200 VK7JG 45 45; 0827 50.110* VK5DK 55 55. *Oops!

As the text books suggest, I found signals easier to read on 50 MHz than on 144 MHz - did not try 432 MHz. Unfortunately, power line QRM was bad on 144 MHz so missed some of the weaker stations.

Russell VK3ZQB

8/11: VK1VP 0630 4x7; VK3AFW 4x7 at 0712. There were many other stations crowding around 144.100 but it seemed difficult to induce them away to frequencies other than 144.100.

The activity lasted until about 0830 and I did not notice any significant aurora display once the sun had set.

9/11: Allan VK3XPD called me by phone to alert me that there was more activity. I worked VK3TMP 4x9 at 0720, VK3XPD 4x7 at 0725, VK3BWT 4x4 at 0726, VK3AFW 4x5 at 0727, VK2TWR 4x3 at 0748 and also heard VK1VP and VK3EK.

There were a few more that I missed. Once again signals lasted until about 0830 but there is significant aurora light display still visible.

Gordon VK2ZAB

Between 0700 and 0800 on 8/11, Guy VK2KU at Springwood worked VK5NC, VK3AFW, VK3DUT and VK3ATQ. Heard VK3TMP and another VK3 unidentified. VK2ZAB worked VK5NC between main and sweets courses! All contacts SSB with some whistling.

Colin VK5DK

9/11: Contacts only on six metres due to noise problems on two metres. Stations worked were VK3TDV, VK3ATQ, VK3KAI, VK3DQJ, VK3HY and VK7JG.

Scott VK4JSR

Nothing heard on 144 MHz beaming 200 degrees; only the occasional meteor burns on CW.

Alan VK3XPD

8/11: I was at the QTH of Max VK3TMP at Somerville when Barry VK3TBM in Box Hill alerted us to auroral activity in the south. At 140 degrees east there was much "wavy" type noise to be heard. The voice is best described as a loud whisper without any tonal qualities.

Max worked Rod VK2TWR, Trevor VK5NC, Russell VK3ZQB and several others in VK1, VK2 and VK3. At one stage we thought we heard a VK4 but none appeared to have been worked.

9/11: With the antenna south the same stations were worked again plus Rob VK3EK

(nee VK3DEM) and Joe VK7JG. Signals were stronger than 8/11 with some reports 4x9.

Several attempts were made on 432.150 but the characteristic aurora noise was absent and the attempts were unsuccessful.

ZL3TIC

9/11: 0330 VK7JG 5x9; 0340 VK1MJ 5x5; 0345 VK3AJK 5x5. Video on 46.240 5x9 all afternoon. In evening strong aurora with 45.240/250/260, 55.250/260 5x9, also MUF well over 40 MHz to Asia, copying "CB" type communications on 28 to 40 MHz.

VK5LP

The aurora did not extend to Meningie, or to Roger VK5NY or Adelaide. Normally, one would expect a return to enhanced conditions in about 27 days time, but with this being caused by CME activity, it is possible that it will not occur around that date. But look and listen anyway.

Closure

We look forward with anticipation to the forthcoming Es summer period. If we can be treated in the same way as the Northern Hemisphere during their last summer we should be happy.

In addition, there are many pointers urging us to be vigilant and watching for F2 openings, certainly to North America and the Caribbean, but also to Europe and the many countries to be found on the way to Europe.

I hope that the South African stations will think to turn their antennas towards Australia and not have them permanently facing north to Europe. That direction may give them the most contacts but there are many stations in VK seeking Africa as a continent and South Africa probably offers our best chance, although there are some other very active amateurs in smaller countries.

By the time you read this the Spring VHF Field Day will be completed. The next contest is the Ross Hull Memorial Contest commencing after Christmas, followed by the VHF Field Day in January, so there are lots of forthcoming activities to interest everyone.

Closing this month with The Philosopher's Corner:

1. The brain is a wonderful organ: it starts working the minute you get up in the morning and does not stop until you get to work!
2. Small miracle: discovering after you've locked the keys in the car, that you forgot to wind up one window.
3. The richest person in the world is not the one who still has the first dollar they ever earned; it's the one who still has their first friend!

73 from The Voice by the Lake.

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WIA Divisions News

Forward Bias — VK1 Notes

As the year draws to a close, things quieten down in the Division for the holiday season until our first meeting in the new year. With this edition of the column, my involvement with *Forward Bias* also draws to an end as, from next year, Peter VK1CPK has kindly agreed to prepare these monthly updates.

I have enjoyed preparing the Divisional notes but, as foreshadowed in last month's column, I'm "winding back" my involvement in official matters for the foreseeable future. At our meeting earlier this week I indicated to the committee that I did not intend to seek re-election to the position of President.

I further noted that the time pressures alluded to in last month's column have grown and will necessitate me taking a less active role in the few remaining months of the Divisional year. My heartfelt thanks go to my colleagues on the committee who have expressed their willingness to take up the slack where required.

The matter of insurance for the Division has finally been resolved, thanks to the efforts of Les VK1LD and Gil VK1GH. Comprehensive policies have been secured at a competitive rate. The cover includes voluntary worker and public liability components closely tailored to our requirements.

There is, of course, considerable discussion underway about the future of the WIA and your committee is actively involved in this process. Our efforts are spearheaded by Mike VK1MJ and Gil VK1GH. Your input is welcome and, indeed, encouraged in this process.

Coming Events

The summer fox hunting season is well under way. Hunts are held on Thursday nights and are organised by our irrepressible Technical Group. Contact Neil VK1KNP or John VK1ET for details.

There is no monthly meeting in December; however, be sure to come along to our Trash and Treasure/Buy and Sell evening on Monday, 25 January starting at 8 pm.

In closing, on behalf of the committee and myself, may I wish you and your family a merry Christmas, a happy, safe and pros-

perous new year and good DX too. Look forward to seeing you in January!

Hugh Blemings VK1YYZ
Division President

VK2 Notes

Amateur Radio House

Once again we are coming to that time of the year when thoughts start turning to Christmas, holidays and all the things that go with the holiday season.

Whilst activities are scaling down elsewhere for the holidays, here in the VK2 office the 1999 Wall Planner is already partly filled with dates set for the coming year. For example, all Council Meetings are showing plus examination dates through to December 1999.

These, together with Trash and Treasure events, Club Conferences, WICEN meetings, Club, and other important meeting dates throughout the year, indicate that Amateur Radio House is again going to be very busy indeed in 1999.

This is as it should be; Amateur Radio House is for the use of our members whether to hold meetings, attend Council Meetings (just to see what goes on) or simply to peruse our very extensive library; plus, of course, the bookshop.

You can enjoy a cup of tea, coffee, or, on a hot day, a refreshing glass of iced spring water whilst having a friendly chat with a fellow visitor or our office staff. Interstate and overseas visitors are especially welcome.

New Tenants

A couple of months ago the downstairs office was again leased. When our agents rang to say that they had received an offer in line with the terms that Council had set, I asked what sort of business they were in. When I was informed "Plant Hire", I immediately had visions of either our car-park full of evergreen shrubs or our members being unable to park because it was full of bulldozers, etc.

I shuddered to think of the President's new Holden Caprice "VK2YC" having to park in the street. Anyway, all is well. The new company only acts as agents; eg, if you want a combine harvester, they put you in touch with someone who has one available and take a fee for their trouble. So, there is still room in the car-park for our visitors and Michael's Holden. The new tenants are a VK3 company, which is a bit of a worry, but the staff seem friendly enough!

Affiliated Clubs Conference

At the time of writing we have just closed off the delegate acceptances and agenda items for the Affiliated Clubs Conference to be held

on 14 November. With 50% of clubs attending, some sending two or three delegates, the Conference promises to be the largest yet; but more on that next time.

Annual General Meeting

The date for the 1999 Annual General Meeting has been approved by Council and will, therefore, be held at Amateur Radio House, Parramatta on Saturday, 17 April 1999.

Nominations for Council, and Motions on Notice, must be received at the office not later than 12.00 noon on Saturday, 6 March 1999. The appropriate forms will be available from the office early in February. Ballot and proxy forms, for those members eligible to vote, will be sent out in March with the Annual Report.

Christmas Holidays

Finally, members please note that the office will be closed for the Christmas Holidays from close of business on 23 December, and will re-open on Monday, 11 January 1999.

On behalf of your Council and office staff, I wish you, and your family, a Very Merry Christmas and a Happy, Prosperous and Safe 1999.

Eric Fossey VK2EFY
Division Secretary

VK5 and VK8 Notes

It is an acknowledged fact that change is virtually irrevocable. Even if we sit and do nothing it will still occur. This applies also to the operations and functions of the WIA. We have our various conferences and meetings and from these action occurs (sometimes not as much as we would wish) and advances are (sometimes) brought about.

Currently there seems to be some action occurring at Federal level with consultation taking place on a number of issues. What will result is to us unforeseen. Gradually we will become aware of any decisions made and over time perhaps learn of and see the results of decisions.

Likewise, in the area of Divisional activities, things are happening. I will try and present some of these for you.

The Burley Griffin Building (BGB)

You will have seen this headline before. Still the saga continues, but in a different vein.

The recent situation was that the West Torrens Council, which owns the property, had indicated a likelihood the BGB would be sub-divided from the main property to be sold and retained by the Council.

This certainly would present few problems for the VK5 Division, apart from additional running costs, lease, water, power, etc to the Division. The situation has been changing and, as I write, is quite fluid.

The VK5 Council has been approached by the Property Development Officer of the West Torrens Council with a suggestion which involves some possible alternative sites for our Divisional Headquarters. He indicates, in his opinion, good reasons for such an approach.

It may well be that a change along these lines could be beneficial to the Division. An alternative site may be less costly for us in the long run, and a more congenial meeting location may result.

Members of the Divisional Council have so far looked at four different proposed sites and indicated generally their order of preference with regard to each.

Currently, more information is being obtained and quite a few questions generated as a result.

You may remember that a survey was carried out not so long ago to determine members' wishes on a number of matters.

From this survey it became clear that the BGB is not a site very much in favour with members as far as meetings are concerned. This throws new light on our occupancy of the BGB and the possibility of a move.

A final decision has to be reached by your

Divisional Council. This is not the type of issue which can be placed before the membership on a general basis for a decision. Naturally, members will be kept informed as to actions taken and will be given the opportunity to approve any final decision made by their elected representatives.

Unfortunately, it is not possible to provide a more detailed explanation in these notes. However, there is no doubt that support of members is needed as, if a move is finally required, there will be quite a bit of work to be done in transferring our operations from one location to another.

Constitution

With this issue of *Amateur Radio* you will find the bi-monthly issue of the Divisional Journal. This will consist mainly of the "draft" version of the proposed new Divisional constitution which has been prepared by the special sub-committee appointed to produce such a document.

Please look carefully at this document and give careful consideration to its contents. It is hoped that we will be in a position to present the new constitution to members for their approval at the Annual General Meeting in April 1999.

Recruiting Campaign

A suitable letter has been produced which places before any interested persons, members and non-members, a case as to why the WIA should be supported as much as possible. Copies of these are being distributed by various means.

In view of the current membership situation, I suggest that you should give strong consideration to encouraging others to provide their support for the WIA by either reinstating their membership or joining as a new member, as appropriate.

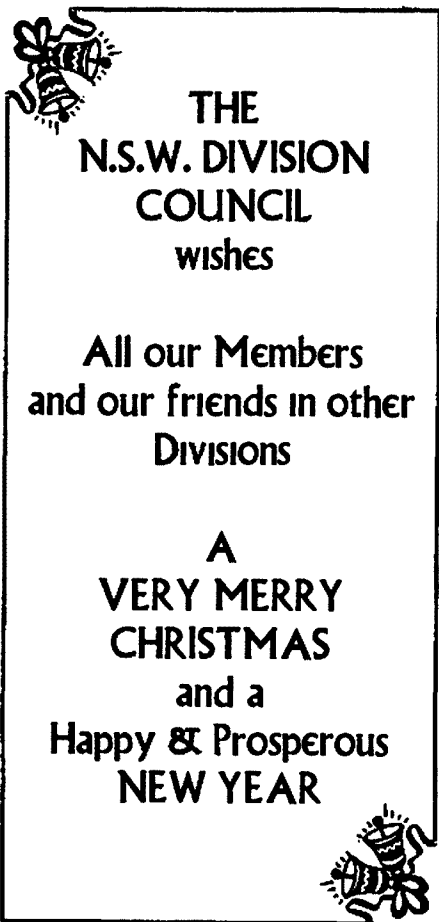
Action is also in hand to produce and provide publicity material intended to encourage more people to take up the hobby of Amateur Radio.

Meeting Program

The December Council Meeting will be held on a date yet to be decided. There will not be any General Meeting for the month of December. It is possible for January that, instead of the usual format, a social event will be organised. I suggest you keep tuned to the VK5WI Sunday news broadcasts for more news on this. You might also note that there will be the usual brief recess in the broadcasts over the Christmas/New Year period.

QSL Cards for VK5MIR Contacts

Some delay has been experienced in connection with scanning and preparation of



THE
N.S.W. DIVISION
COUNCIL
wishes

All our Members
and our friends in other
DIVISIONS

A
VERY MERRY
CHRISTMAS
and a
Happy & Prosperous
NEW YEAR

photographs for use on the commemorative QSL cards for voice contacts with VK5MIR.

Requests for the QSL card are slowly coming in. There may be some delay allowed so that a general idea can be gained as to how many cards should be printed. Full details regarding QSLing for the card were provided in the November 1998 issue of *Amateur Radio*.

Further Changes

I understand that this December issue of *Amateur Radio* is the last to be produced under the present contract with vk3br Communications Pty Ltd.

I would thus wish to express my gratitude to Bill Roper VK3BR for the assistance and co-operation he has shown to me in connection with my contributions to the magazine on behalf of the Division. Bill has always been helpful and at times shown great patience with my various foibles where it comes to trying to express an opinion for this part of the country. Thanks for a well done job, Bill.

Christmas Greetings

I wish to extend Christmas greetings to all members of the WIA and readers of this column on behalf of the South Australian Division of the WIA.

Personal greetings and wishes from both my wife Sylvia and myself that the Christmas season will be a blessed and beneficial one for you and that 1999 will be a happy and successful year in whatever activities you are pursuing.

Ian J Hunt VK5QX
Divisional President

VK6 Notes

FM Field Day

Did you have a go at the FM Field Day in October? I managed to make a few contacts, and was impressed by the efforts which some individuals went to. I didn't hear many Novices, though, so perhaps they'll do better next year. Speaking of next year, hopefully I'll be able to tell you the results of the Field Day by then!

Powerless?

How many amateurs are able to operate their full station without mains power for any extended length of time? It would be interesting to list how many stations in VK6 could operate without mains power. If your station could be classified as "Powerless Wireless", I'd appreciate hearing from you.

Council Meeting

The following is drawn from the minutes of

the WIA Council Meeting on 3 November 1998.

Phil VK6SO explained the Hills Amateur Radio Group's (HARG) proposal to establish an automatic Morse practice beacon on 3555 kHz, complementary to the existing service from VK6RCW on 147.375 MHz. After considerable discussion, Council agreed that there was a role for an 80 m Morse Beacon. Council was prepared to assist with estimated cost of power up to \$150 pa and, if necessary, an additional licence fee of \$50 pa. Software employing the Farnsworth method of character spacing should preferably be employed.

Business Arising from Previous Meeting:

1. Dave VK6IW is still working on suggestions to *Amateur Radio* magazine about improvement to the new members list. The following matters are pending:

- (a) Looking into a common Yellow Pages entry for the WIA in all States;
- (b) The request for a catalogue of old records held by Dave VK6ATE; and
- (c) The enquiry from the Battye Library of what old records are held.

2. The letter proposed to Clubs concerning the outcomes of the last Conference and alternative dates for a future Conference is again carried forward.

3. The proposed letter to the Federal President requesting that the Liaison Team meet with the ACA has been despatched.

4. The proposed letter to Federal conveying the concern of Clubs about apparently high examination fees is carried forward.

5. The Radio Course textbooks have been returned from the publisher with corrections inserted.

6. Doug VK6ER had been advised about the preferred method of reporting intruders.

7. The bookshop stock is to be transported to Hamfest by Cliff VK6LZ, not John VK6IM.

8. Nominations for "Amateur of the Year" had been called for on the broadcast but, as no nominations had been received, Council decided that no award would be made this year.

9. Will VK6UU has been in touch with the NCDXA concerning the replacement of the borrowed HF antenna for VK6RBP. It was agreed that the old antenna (type R5) would be sold and the proceeds made available to NCDXA. A request would be made to NCDXA to source a second-hand type R7 as a suitable replacement.

Correspondence: The Secretary reported on the following:

1. The licence renewal for VK6RBP had been received. It was agreed that the Division would arrange a renewal for five years for \$168, (thus achieving a significant saving over 5 x \$50) and seek reimbursement from Federal.

2. A letter had been sent to the insurance broker seeking confirmation that "un-qualified" tower climbing volunteers were covered by the Division's Accident and Public Risk insurance policies.

Reports:

1. **Treasurer:** Bruce VK6OO sought approval for payment of accounts P40-P47.

2. **Membership:** A new member in Mr Peter Gregory (SWL) was welcomed to the Division.

3. **Broadcast:** Tony VK6TS offered a vote of thanks to Mel VK6TVA for presenting the News Service on Sunday, 1 November during Tony's absence interstate. The next Broadcast would originate from the Hamfest site at Ashfield. There had been a disappointing attendance at the first "On-air Monthly Meeting Net". However, the net will continue, with country members in particular encouraged to check in on 3564 kHz.

4. **Federal:** (At this point Wal VK6KZ left the meeting). Will VK6UU reported on a number of matters including:

(a) The postal motion which encouraged the Liaison Team to co-opt members had been passed.

(b) The President's report to Federal Councillors. There would be a teleconference on 21 November.

(c) There was advice from the Federal President about progress with an ACA Liaison Team meeting schedule with ACA. An agenda of topics was proposed and additions sought. The agenda topics included the 80 m DX window; a VLF allocation; conversion of some frequency allocations from secondary to primary; the examination system; the use of the ACA data base for Call Book purposes; EMR regulations; and special callsign authorisation.

Further possible topics were proposed by Will VK6UU and by the Council, including the ACA attitude to HF Gateways; 29 MHz gateway linking; FM deviation below 28 MHz restricted to +/-3 kHz bandwidth (why cannot wider bandwidths be allowed with self regulation controlling possible excessive applications?); the retransmission on repeaters of licence grades not authorised for the repeater output frequency or mode is not at present allowed - why cannot this regulation be relaxed?; the need for advice by the ACA to the WIA about policy changes brought about by representations other than by the WIA; what is the ACA attitude in principle to the establishment of an examination free licence grade with strict conditions?; the need to address possible inaccuracies in the ACA Internet Page, for example "Why should policy limit repeater linking to three stages?"; "The absence of 50 MHz 'drop through' approvals from the relevant list."; and "The apparent requirement that callsigns for

beacons be limited to the RSa-z and RTa-z block, where repeater calls may be from the entire Raa - Rzz block.”; the Amateur Service is still over regulated - there is a need to simplify regulations - what steps can be taken to achieve this aim?; at the edge of the 80 m DX window, amateur operators are exhorted to keep clear of 3794 kHz - what is the allocation that requires this to be so?; what is the status of reciprocal licence negotiations with Austria, Korea, Peru, etc?; and why are VK9 callsigns not up-to-date in the ACA database?

(d) The minutes of the Special Council Meeting called to discuss the Draft Business Plan were discussed. It was agreed that the proposed draft postal motion be changed to a “recommendation”. The Federal Councillor will follow up accordingly.

General Business:

1. The matter of the election of President to replace Wal VK6KZ, who resigned in May 1998, was discussed. Vice President Cliff VK6LZ, presently acting President, accepted nomination as President and was duly unanimously elected.

2. Concerning the proposed WIA Group Repeater/Beacon site, Don VK6HK reported that the latest advice from the Site Management Committee was that they had no objection to the proposal to establish a WIA Group Repeater/Beacon site there. However, the proposal had been forwarded to their parent body CEO for consideration at their committee meeting scheduled for 17 November 1998. An offer had been made for a WIA representative to attend if required.

Wanted! A Scribe

Would anyone else like to have a go at writing this column? As you have seen, there are times when the column goes wanting, simply because it has a lower priority than other facets of life.

A suitable volunteer should be at least semi-literate (able to type with one hand?), will need to dedicate about three to four hours to writing the column every second or third month, and would benefit from having e-mail and/or packet access.

Merry Christmas

Both Chris and Chris would like to wish you a very safe and Joyous Christmas, and may '99 have more sunspots than '98!

Chris Hill VK6KCH

“QRM” News — VK7 Notes

First of all, I must thank Robin VK7RH for filling in for me with the November notes while I was over on the “island up north”.

While over there I had a good chat to the South Australian President, Ian Hunt, and Federal Director Martin Luther. It's great to be able to just sit down with these people and find that, with slight variations, the same problems are all around us! Good also to be able to renew acquaintance with my “old” (don't take that the wrong way) sparring partners in the Federal office, and *Amateur Radio* guru, Bill Roper VK3BR.

JOTA

JOTA overall was a good exercise around Tasmania this year with a lot of contacts around Australia and New Zealand and, due to better conditions, a lot of contacts around the world.

We do have a problem, though, with the time zones for Scout/Guide groups overseas. Band openings and convenient times don't match well and our Tasmanian Summer time change puts the North American openings very late in the night for kids.

QSL Cards

Do other states have problems with Amateurs not wanting their QSL cards? John Bates VK7RT, our QSL manager, is having big problems with this, particularly from non-WIA hams. What must overseas hams think of us when they get no card in return?

History

Our historical officer, Richard VK7RO, is updating our records and any photos, newspaper clippings, etc will be appreciated.

The old callsign of the Southern branch, VK7SB, has been revoked and the historical callsign, VK7OTC, has now replaced it. This callsign commemorates the fact that our Clubrooms in Hobart were the home of the Overseas Telecommunications Commission on the high Domain site before the Institute took it over. The Hobart City Council is placing a large sign at the gates setting out the historical importance of our site.

Meetings

Our bi-monthly Divisional Council meeting is on Saturday, 14 November, just too late for a report this month. Our Council meetings are open to all members and, with the Business plan discussions scheduled, I think there will be a good rollop.

The Northern Branch had an excellent November meeting with the Curator of the planetarium at the Launceston Museum – fascinating! December sees the final meetings of the three Branches, all social functions.

Your Tasmanian brethren wish all our fellow Amateurs a happy, wonderful and blessed Christmas season.

Ron Churcher VK7RN
Division President



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HF - VHF - UHF BASE ANTENNA
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Send \$ 5.00 for a 15 minute informational video
Refundable with every antenna purchase.

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Over to You

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents

Value of HF Radio

Recently I visited the School of the Air base at Alice Springs. In a large and informative display room, I saw details of how modern technology has become part of outback families' communication needs. Radphone and satellite TV are now common, and every child enrolled in the School of the Air is given a computer and modem for internet access and e-mail.

The obvious question had to be asked: "Is HF radio still used for communication?" The answer was a resounding "Yes".

The School of the Air still conducts its daily lessons on HF radio, for the simple reason that most of the other communications equipment at the homesteads require power at mains voltage. It is expensive to run diesel generators during the day so they are switched off. This leaves only battery power. Every homestead still has an HF radio and all that is required to run it is a car battery. Its use is also virtually free of cost, unlike the other services which are time charged. So HF radio is still widely used.

Isn't it nice to think that even in this age of high tech satellite communications, good old HF radio still has its place.

Peter Stuart VK2BEU
24 Carmen Drive
Carlingford NSW 2118

Thanks

The survival of the hobby of amateur radio in Australia depends upon a strong representative "trade union" body. That "voice for amateur radio" society is, and can only be, the WIA, which should be actively supported by every radio amateur interested in the future of the hobby.

A vital thread that helps to hold the WIA together is its monthly journal, *Amateur Radio*.

Amateur Radio commenced publication over 66 years ago. I first became involved with "our" magazine 35 years ago, and it has been a privilege to have been associated with

this "forum for dissemination of WIA news, members' technical experiments, experiences and opinions" for such a long time.

However, all things must end sooner or later. Even though a positive aspect for me of the difficult decision made by the Federal Directors is that I can now freely accede to the beckoning of new horizons, I am sad that this issue of *Amateur Radio* finally marks the end of my commitment to its publication.

I would like to thank all those many radio amateurs who contributed to *Amateur Radio* during my period of involvement. In particular, I would like to express my gratitude and appreciation publicly to the Editor, the Publications Committee, and the terrific band of columnists and contributors who have made my task of producing the magazine so interesting and rewarding over the past five and a half years. I will miss my regular monthly communication with you all! Hopefully, the regular communication by post, telephone, fax and e-mail will be replaced by many on-air contacts.

Despite the "voices of doom", I believe strongly that the great hobby of amateur radio will survive beyond the foreseeable future.

I wish the WIA, all its members, and *Amateur Radio* magazine a long and successful future.

Bill Roper VK3BR
3 Tamar Court
Mentone VIC 3194

Licensing by the WIA?

I refer to the *Editor's Comments* on page 2 of the November issue of *Amateur Radio* by Bill Rice.

It is disturbing to read that the WIA membership has dropped from 8,000 in 1988 to a current figure of about 4,000 - dramatic indeed!

One could come up with several reasons for this severe decline but I doubt if the discussion would achieve much. Rather, may I make a suggestion for a move in a new direction?

The writer has discussed the membership problem with many Hams in recent months and most (not all) are prepared to consider a scheme whereby the annual licence fee would include automatic membership of the Institute.

As I've stated, not ALL are in agreement, but most of those asked. It is very obvious that about 4,000 paid-up members are looking after the interests of about 16,000 VK licensees!

If the WIA could negotiate a deal with the ACA whereby the WIA would be responsible for the collection of Licence Fees and the issue of call signs, etc, the matter of membership would be resolved.

Such a deal would pave the way for a

reduction in the cost of the membership component, which seems to be the main reason for the drop in WIA members.

The idea is simply another move towards privatisation of a Government service. Without it, I doubt the viability of the WIA beyond the turn of this century!

Max Morris VK3GMM
PO Box 222
Rye VIC 3941

JOTA

Please find enclosed photo (see front cover of this issue of *Amateur Radio*... Ed) and copy of the article it was printed with, together with a copy of a release for publication if you choose to publish them at sometime.

The article appeared in the *Townsville Bulletin* on Monday, 19 October, and relates to the JOTA station VK4SBW that I, along with my XYL Sheila (yes, that's her name!), was running over the JOTA weekend.

The station was set up at the Bluewater Scouts Site incorporating Camp Tamaroo, which is located approx 30 km north along Highway One from Townsville.

For antennas I used a dipole cut for 80 m and another for 20 m strung up into the trees, aligned as best I could to give a north-south output direction. Some 2 m antennas were also strung up as high as possible, to enable local area simplex channel chats.

At the moment the Scout group does not have many older members, who have in previous years worked the bands till all hours, and so I was able to enjoy a bit more sleep than on many previous occasions!

There was also a special Saturday night dinner and presentations, it being the tenth anniversary of the Group and the site. I have worked the past six JOTA weekends with this group as some of my work mates helped set the camp up back then.

In the Townsville area, members of the Townsville Amateur Radio Club Inc had eleven separate active JOTA stations scattered around the Townsville district, most of which were "bush bashing" for the event. I might even suggest that the JOTA weekend is a practice field day, when we all want to see how well we are prepared for our cyclone season (the John Moyle Field Day always comes at the end of cyclone season!).

Iain Morrison VK4IGM
PO Box GE 6
Garbutt East QLD 4814

New AR Addresses
See page 1 for new
addresses and telephone
numbers!

Intruder Watch

Gordon Loveday VK4KAL

Federal Intruder Watch Co-ordinator
 Freepost No 4, Rubyvale QLD 4702
 Tel: 07 4985 4168
 Packet: VK4KAL@VK4JEM-1

Some changes are in line for the Primary Intruders. This has been brought about by perusal of observer log sheets since the last Summary in *Amateur Radio*.

Some may doubt the wisdom of such a move, but possibly the majority will be unaware that "the few" are serious about defending the legal bands we all like to make use of, regardless of which operating class we are in.

Some frequencies, we will HAVE to LIVE with. I refer to the Single Letter Beacons, known as "SLBs". Admittedly they are illegal, but of nuisance value only and, in my opinion, can be put into the same category as "the birdies" in the receiver! We all know they are there, so let's forget them and put our efforts into frequencies we have more chances of success with.

This brings to mind 3560 kHz. Yes, it comes from Pyongyang, Korea, but how often do we take time to really listen to voice transmissions, to try for those vital statistics that are important for us to forward on as proof of their transmissions on 80 m. I take this frequency as an example; there are many more.

Harmonics are a good starting point. All our bands abound in this form of intrusion.

Start looking for them, as these have a very good chance of being removed. Why? Because no self respecting station manager or technician can bear to have his station being accused of "unclean" transmissions. But remember, we want full information as to frequencies, etc, plus any "titbits" of station program which can match the offending station log.

We have a report of the fifth harmonic of 2.850 MHz coming out at 14.250 A3E. Station Pyongyang again - S3. This is a staggering signal, heard from 2000z to 1800z the next day. As you will note, the fundamental signal is outside our band but the interference is not.

The 10 m band is coming to the fore with increasing intrusions. Those capable of checking FM should do so from 28.150 to 28.138 MHz; the language is possibly Asian. This intrusion has all the "trade marks" of one reported a few years ago, which turned out to be a Thai trucking company! The 10 MHz band should be checked out also, as commercial intrusions have been logged there.

A relatively new intruder to our region is to be found on 28.650 MHz on A3E. The ID is Radio Havana, Cuba, possibly a third harmonic of 9550 kHz. It is heard about 0600z daily but no further data is available. This was mentioned last month.

So a slight update of Primary Allocation will be to remove 7.039.5 and insert 28.650 MHz.

I am reviewing the RTTY stations. It seems that if we get insufficient information from a non readout, it may pay to address the voice transmissions, which could be a better proposition.

As a matter of interest I've been looking through the July non amateur intrusions for the African Area of Region 1. We don't have any intruders, compared to that area, but we share quite a lot of phone stations on both 40 and 20 metres.

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Club News

Gippsland Gate Radio and Electronics Club Inc (GGREC)

Amateur Operators Certificate Course - 1999

The GGREC will be conducting a radio class in February for persons wishing to obtain an amateur radio operators licence. The class will be held in Cranbourne on Wednesday evenings from 7.00 to 9.30 pm for twenty weeks from 3 February.

Level of Study

While the courses will aim for AOC (Full license) standard, persons studying for NAOCP (Novice) and Novice-Limited examinations will be catered for. There are no prerequisite qualifications for attendance to the class - all are welcome.

Fees

The fee for the course will be \$125 plus a mandatory one year subscription to the GGREC Radio Club (\$30). This fee includes regular newsletters. Fees are payable on the first class night. Discounts on the *subscription* portion apply to Students, Pensioners and Family members.

On the week following the class, an examination will be conducted at the same venue for a separate fee.

For further information, call Ian Jackson VK3BUF on 9776 5000. Or visit the clubs Web site at <http://avoca.vicnet.net.au/~ggrec>. Call early as positions on the class are limited.

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Intruder Watch Summary for October

FREQ	UTC	EMM	DETAILS
7.098	0005	A3A	ID Jakarta Indonesia
14.0018	0500	F1B	RTTY, 850 Hz shift, 72 Baud?
14.003	0940	F1B	Also A3C, RTTY & Fax
14.126**	0638	F7B	3 ident chs, 240 Hz, 144 bd, sp 1 kHz,
14.211	0652	F1B	RTTY, 850 Hz, 100 bd, tfc
14.250**	0930	A3E	Pyongyang, 5H/2.850 MHz, Korea Nth
18.075	1150	J3E	Non Amat net, Hindi + RTTY, India
18.075	1240	A3E	Weak English prog de India, Commercial
28.215**	0010	A3E	2 way non amateur, Commercial, ID?
28.650**	2226	A3E	R Havana, Eng/Sp, 3H of 9550, weak, Cuba

Note** indicates Primary Frequency.

RAC Dues Decrease

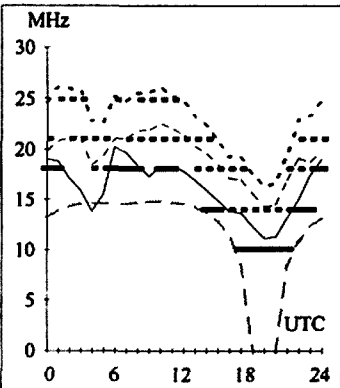
On the international scene word that Radio Amateurs Canada has rescinded its recently imposed \$10 annual dues increase. Radio Amateurs Canada says that a major restructuring plan led to an operating expense reduction of \$80,000. This reduction is being passed along to members of the national society.

[Via Radio Amateurs Canada]

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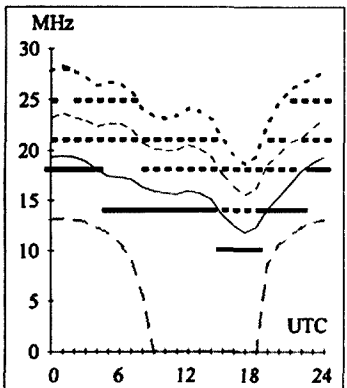
Adelaide-Accra 242

First F 0-5 Short 14682 km



Brisbane-Auckland 123

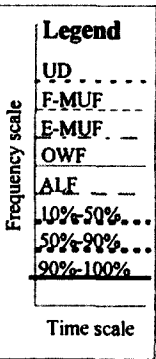
First F 17-13 1E0 Short 2289 km



December

1998

T index: 109



HF Predictions
Evan Jarman VK3ANI
 34 Alandale Court, Blackburn VIC 3130

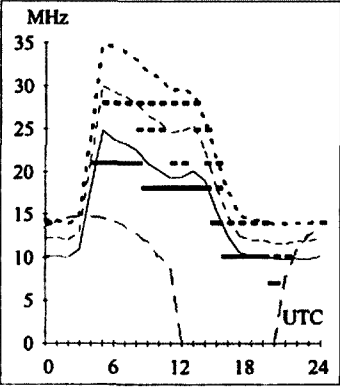
These graphs show the predicted diurnal variation in key frequencies for the nominated circuits. The frequencies, identified in the legend, are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency

Also shown hourly are the highest frequency amateur bands in ranges between these key frequencies; when useable. The predictions were made with the Ionospheric Prediction Service program ASAPS version 4. The path, propagation mode and Australian terminal bearing are also given for each circuit.

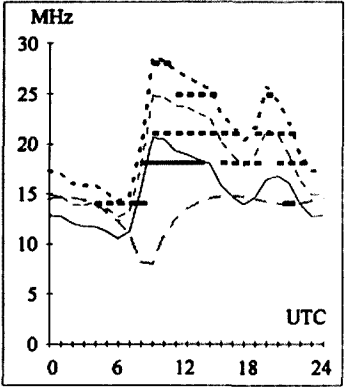
Adelaide-Moscow 318

First F 0-5 Short 13807 km



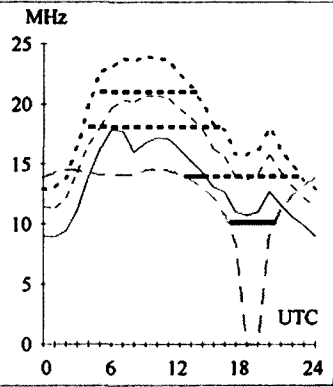
Brisbane-London 147

First F 0-5 Long 23498 km



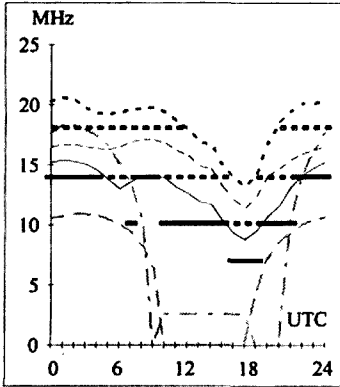
Canberra-Capetown 219

Second 4F4-13 4E0 Short 10778 km



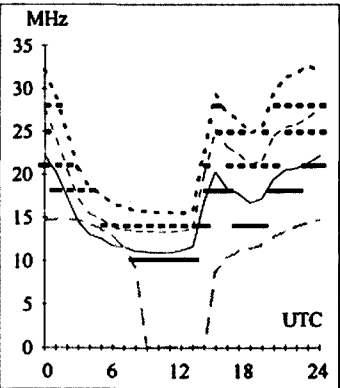
Darwin-Invercargill 144

Second 3F12-21 3E2 Short 5157 km



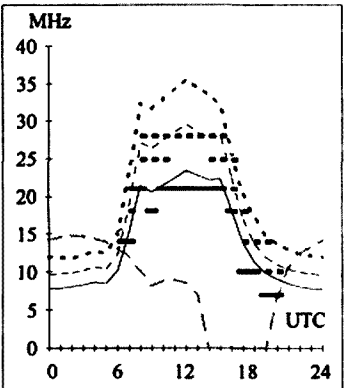
Adelaide-Ottawa 58

First F 0-5 Short 16901 km



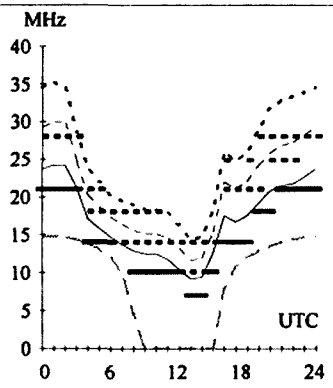
Brisbane-London 327

First F 0-5 Short 16526 km



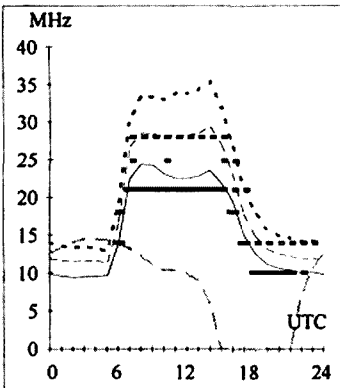
Canberra-Los Angeles 62

First F 0-5 Short 12309 km



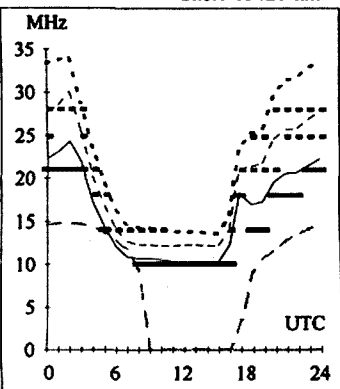
Darwin-Paris 322

First F 0-5 Short 13818 km



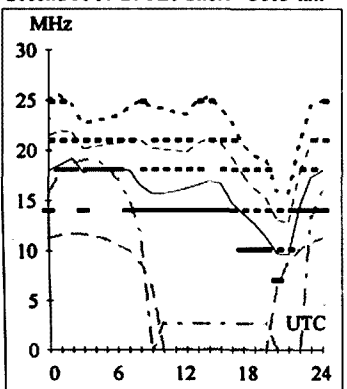
Adelaide-Vancouver 49

First F 0-5 Short 13421 km



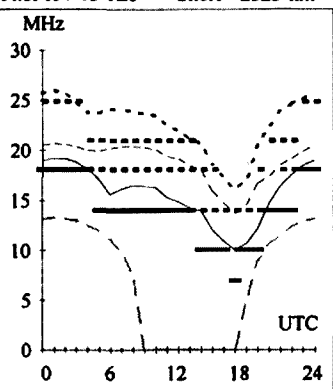
Brisbane-Manila 320

Second 3F10-20 3E1 Short 5813 km



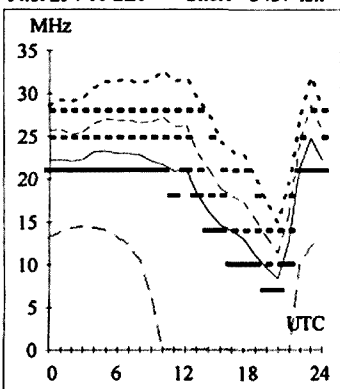
Canberra-Wellington 114

First F 17-13 1E0 Short 2325 km



Darwin-Tokyo 10

First 2F4-10 2E0 Short 5437 km



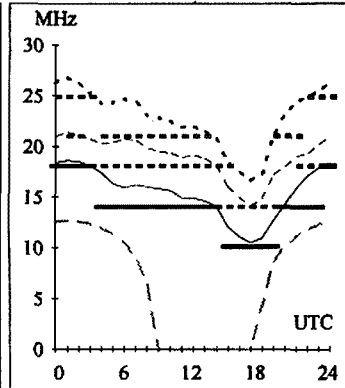
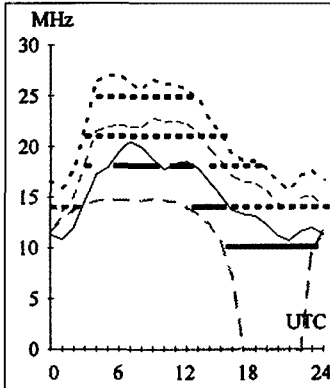
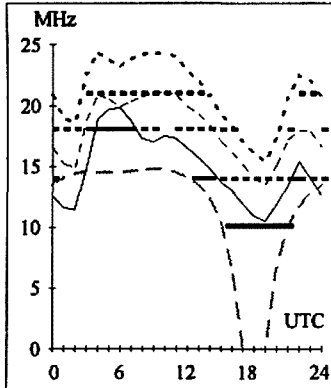
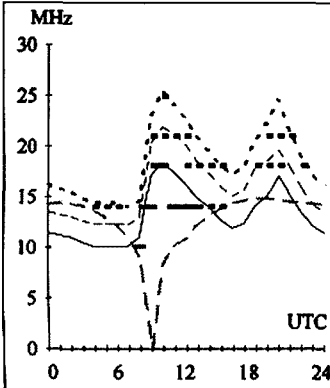
Hobart-London 123 **Melbourne-Lusaka** 241 **Perth-Johannesburg** 248 **Sydney-Auckland** 106

First F 0-5 Long 22619 km

Second 4F4-11 4E0 Long 11152 km

First 3F4-11 3E0 Short 8315 km

First 1F8-15 1E0 Short 2159 km



Hobart-London 303 **Melbourne-Miami** 94

First F 0-5 Short 17404 km

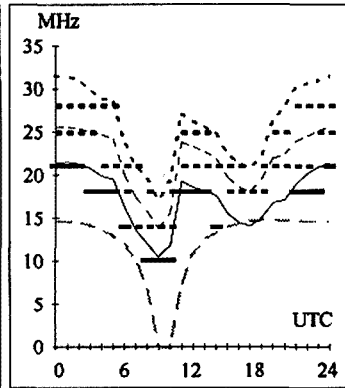
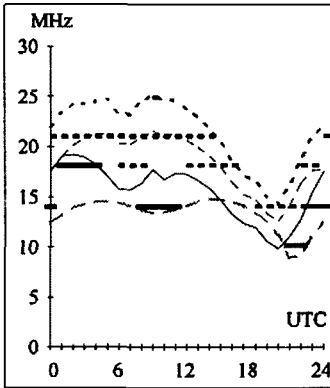
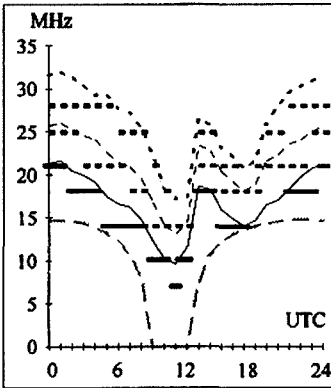
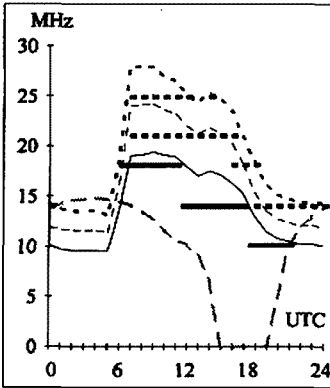
First F 0-5 Short 15584 km

Perth-Rio de Janeiro 203

First F 0-5 Short 13523 km

Sydney-Barbados 119

First F 0-5 Short 16155 km



Hobart-Montevideo 161

Second 4F8-10 4F0 Short 11043 km

Melbourne-Nairobi 255

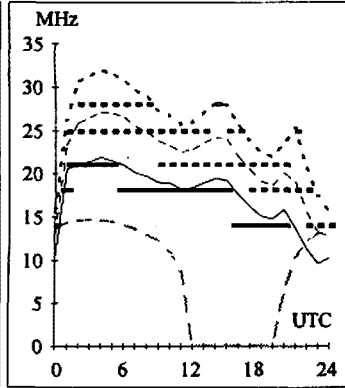
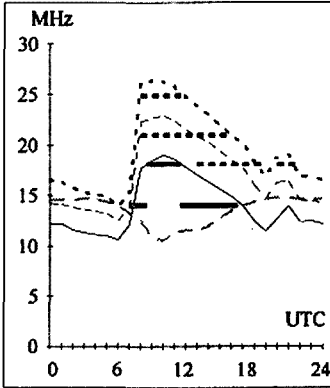
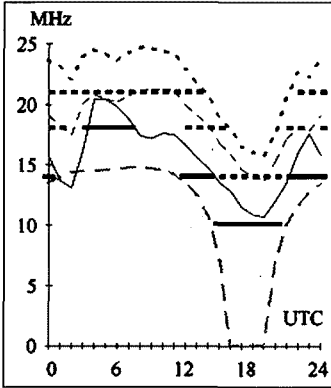
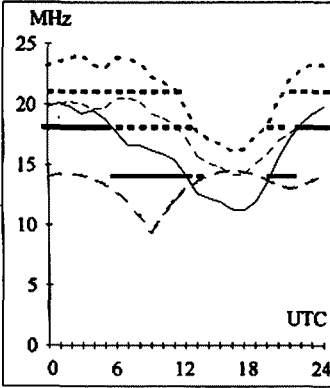
Second 4F3-10 4E0 Short 11562 km

Perth-Rome 123

First F 0-5 Long 26684 km

Sydney-New Delhi 302

Second 4F5-11 4E0 Short 10419 km



Hobart-New York 80

First F 0-5 Short 16610 km

Melbourne-Tel Aviv 287

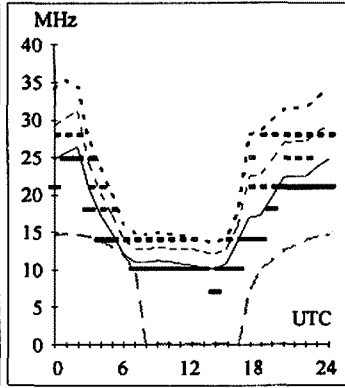
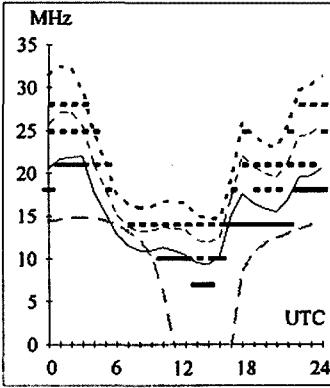
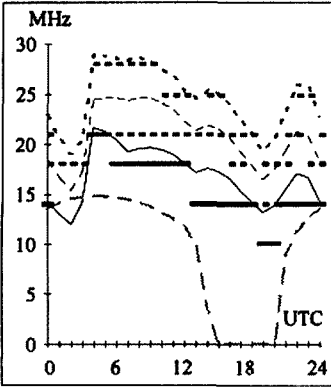
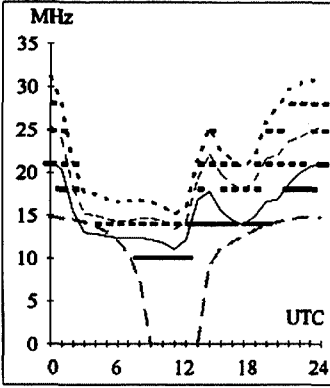
First F 0-5 Short 13766 km

Perth-San Francisco 66

First F 0-5 Short 14743 km

Sydney-Seattle 47

First F 0-5 Short 12471 km



HAMADS

- Hamads may be submitted on the form on the reverse side of the *Amateur Radio* address flysheet. Please use your latest flysheet where possible.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the form on the back of the *Amateur Radio* address flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment offered for sale should be included in the Hamad.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of *Amateur Radio*, at:

New →

Postal: PO Box 2175, Caulfield Junction VIC 3161
Fax: 03 9523 8191
E-mail: armag@hotkey.net.au

TRADE ADS

- **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.
- **WEATHER FAX programs for IBM XT/ATs** *** "RADFAXZ" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph 07 358 2785.

FOR SALE NSW

- **Drake TR7** txcvr in good condn, excellent for serious amateur radio operator, recently checked and calibrated by accredited Drake service agent, \$850 ONO. Max VK2AML 02 9797 0593.
- **Yaesu FT-101** HF txcvr, good condn, mic, headset, manuals, \$300 ONO. Bert VK2VBY, 02 4443 9862.
- **Yaesu FT-707** HF txcvr, s/n 0L121143, full report from recent Yaesu service, YM-35 mic, manuals, cords, box. FP-707 PSU, s/n 2C170410, manual, cords. FC-707 ATU, s/n 1C100318,

manual, cords. All units very good to excellent condn. \$750 the lot, ONO. Evan VK2HES, 02 6762 0595.

- Deceased estate Ken VK2CBI: **Yaesu FT-101E** txcvr, \$300. **Heathkit SB300** SSB Rx, SB400 SSB Tx, \$500 the pair. **Kenwood TR-7400A** 2 m FM txcvr, PSU, magnet base, antenna, \$150. **Kenwood AT-200** ATU and dummy load, \$200. **Leader LSG10** HF signal generator, \$40. **University HF** signal generator and sweep, \$30. **Siltronix FS1000A** peak reading HF wattmeter, \$75. **RCA WO33A** audio CRO, \$30. **AWA Voltomyst** VTM, \$20. **AWA MR6** carphone (6 m) and PSU, \$30. **Eddystone 640** HF receiver, \$50. **Escort EDM1111ADVM**, \$10. **ANX VOM**, \$10. **Hung Chang VOM**, \$10. **MFJ 812B** SWR meter, \$50. **MFJ 16010** random wire tuner, \$50. **MFJ 202B** Rx noise bridge, \$75. **AWA audio signal generator** (to 13 kHz), \$10. **Various kits:** 1 GHz frequency counter, digital capacitance meter, QRP Tx, QRP rcvrs, etc, \$100 the lot. **Various components:** roller inductor, air variable capacitors, enamel coil winding wire, resistors, capacitors, semiconductors, patch cords, logic probes, signal tracers, etc, \$75 the lot. **Power transformers, new, unused:** 2 x DSE M2155, \$5 each; Jaycar MM2004, \$10; Altronics M21, \$30. **Soldering irons:** four including one temperature controlled DSE T1975, \$100. **David VK2IX**, 02 4751 6124 or **Steve VK2AVW**, 02 4751 3594.

- **Commercial UHF** txcvrs, tuned to 70 cm, from \$30 each. **Icom IC-2** and **IC-02** handhelds, with BP7 batteries, in reasonable condn, \$100 each. **Ten-Tec Dentron** ATUs, \$50 each. **Kenwood AT-200** ATU, \$120 ONO. **David VK2BDT**, QTHR, 02 4821 5036.

- **Kenwood TS-50S** txcvr, as new, boxed, used on several occasions only, complete with manual

and accessories, \$1150. Optional AT-50 available if required. **John VK2AYC**, 02 9583 2056.

- **Yaesu FT-736R** 6 m/2 m/70 cm all mode base station txcvr, full duplex operation, VGC, \$1600. **Yaesu FT-26R** 2 m handheld txcvr, dricell battery pack, spk/mic, DC power lead, VGC, \$220. **Chris VK2YMW**, QTHR, 02 9487 2764.

- **Icom IC-2GAT**, s/n 05612, mint condn, boxed, with all accessories, plus carry case, \$385 ONO. **Steve VK2SPS**, 02 4334 7743 after 6.30 pm.

- **3-500** transmitting valves, \$200. **Q-04** (equivalent of 4-400) \$60. **Tom VK2OE**, 02 9482 1565 (evenings).

FOR SALE VIC

- **Yaesu FT-101** with ext VFO **FV-101**, s/n 1H110409, \$75. **Rotator**, large, no controller. **Kenwood TS-450SAT** with autotune, s/n 30700843, \$1200. **Kenwood PS-32** PSU, s/n 30300027, \$150. **LF30A** 1 kW PEP low pass TVI filter, \$50. All as new. **Keit VK3AFI**, QTHR, 03 5221 3658.

- **Icom IC-W2A** 2 m/70 cm handheld, mint condn, hardly used, s/n 12371, with cable, pouch, UT-63 tone squelch, 5 watt, 62 memories, \$375 ONO. **Bob VK3BRF**, QTHR, 03 9878 6613.

- **IFR-1500S** communications service monitor, fully optioned AM/FMN/FMW/SSB, 0-1 GHz, in ex condn, \$10,500. Due to ill health and close of business no longer required. **Rick VK3YM**, 03 9401 4442, fax 03 9408 7112.

- **Phillips FM92** 2 m txcvr, programmed, with all accessories, \$85. **Tokyo Hy-Power ATU**, 2 kW PEP, vernier drives, \$450. **Yaesu FC-107** ATU, \$180. **Icom IC-290H** all mode 2 m txcvr, \$450. **T Marlowe VK3OK**, 03 9808 1705.

- **Icom IC-2A** and **IC-4E** handheld txcvrs, EC, complete with original boxes, manuals, spare BP3 battery packs, LC3 cases, HM9 spk/mics, \$125. **Graeme VK3NE**, QTHR, 03 9338 1018 (AH).

- **Nally tower**, on ground ready to go, plus CDE heavy duty rotator with cable, in EC, \$1250 ONO. **Barry VK3ANR**, 03 5244 0347.

FOR SALE QLD

- **Kenwood TS-430S** txcvr, \$750. **Kenwood TS-440S** txcvr with auto ATU, \$980. **Daiwa CNA-1001** auto ATU, \$160. **Yaesu FC-102** ATU, \$280. **Yaesu FL-2100Z** linear amplifier, two new spare tubes, \$860. **PS-30** PSU, 20 A, \$160. **F S Nicholls VK4ASN**, 07 3207 2050.

- **Kenwood TM-241A** txcvr, 144 MHz. **Yaesu FT-712RH** txcvr. 4 position coaxial switch with lightning surge protection, 0-500 MHz. **Kenwood PS-50** PSU. **Kenwood TS-790A** 144/420/1200 MHz all mode tri-bander. **Timewave DSP-2232** DSP modem, never used. **Kenwood MC-80** mic. Quantity of plugs and other fittings. No longer able to use this equipment due to disability. All for sale at a fair price either separately or together. All manuals available with the gear. **Bill VK4YWY**, 7 Curran Close, Bray Park QLD 4500.

- **Radio Shack DX-394** communications receiver, near new, hardly used, good performer with many features, \$210. Ron VK4BL, QTHR, 0418 233 372, vk4bl@tpgi.com.au.
- **Kenwood TS-50** HF txcvr, s/n 50403167, little used, incl narrow CW filter, \$1400 ONO. Bill VK4BIL, QTHR, 07 3263 2630.
- **Kenwood TS-430S**, s/n 6050959, good condn, both manuals, mobile bracket, Kenwood scanning mic, \$700. Alan VK4IH, 07 4685 2391.

FOR SALE SA

- **Hy-Gain TH3 Mk3** tri-band antenna, with instruction manual, \$100. Ted VK5KEW, 08 8552 3885.
- **Icom IC-720A** HF txcvr, mic, manual, excellent condn, \$625. Hans VK5YX, QTHR.
- **Kenwood TS-130S, AT-130** ATU, ext 120 VFO, MC-50 desk mic, mobile bracket, service manual, all other manuals, EC, \$830. Ranger AR-3500, with operators and technical manuals, \$360. More for sale. Send SASE for list. Paul VK5MAP, QTHR, phone/fax 08 8651 2398.

FOR SALE TAS

- **Kenwood TS-520S** HF txcvr, built-in CW filter, PSU, excellent condn, boxes, manuals, \$395. Allen VK7AN, 03 6327 1171, 0417 354 410.

WANTED NSW

- **WANTED STILL!** Old unloved, dusty receivers, working or not, parts or junkers, for listener and budding restorer, even the big heavy ones, (still yet to get a hernia, now there's a challenge!), will pay dollars if needed. Clean the shack out time - will even bring a broom to help! John L21068, 02 9533 6261.
- **Kenwood CW filter** for TS-140. **Yaesu XF-30C CW filter** for FT-101E. **Ampex 1100** series reel-to-reel tape recorder. Ray VK2FW, QTHR, 02 6365 3410.
- **Icom 02A 2 m FM operation manual**, will pay copy costs. Tom VK2ATJ, QTHR.
- **Drake L7 amplifier.** **GAP Voyager antenna.** **Butternut HF-6 antenna.** Tom VK2OE, 02 9482 1565 (evenings).

WANTED QLD

- **LSI chip SC3062 for Icom 211 2 m all mode Tx.** Will consider a dead Icom 211 or Icom 701 if LSI chip is OK. Chris VK4YE, 07 5543 6053.

WANTED SA

- **Micronta 22-202B multimeter operators instructions.** Will pay costs, photocopy will be OK. Alan VK5OK, QTHR, phone/fax 08 8651 2398.

MISCELLANEOUS

- **The WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose VIC 3765, tel 03 9728 5350.
- If you got your licence before 1973 you are invited to join the **Radio Amateurs Old Timers Club**. A \$2.50 joining fee plus \$5.00 per year gets you two interesting Journals plus good fellowship. Arthur Evans VK3VQ or Milton Crompton VK3MN can supply applications forms. Both are QTHR in any Call Book.

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Silent Keys

Due to space demands, obituaries should be no longer than 200 words

The WIA regrets to announce the recent passing of:-

B G	Powell	VK2AIZ
V (Frank)	Waller	VK2EHY.
L A	Chappell	VK7LC

Frank Waller VK2EHY

Frank Waller from Nelson Bay passed away on Sunday, 18 October 1998 from an illness. He was known to the amateur radio fraternity as VK2EHY.

Frank and I met over three years ago through a family contact and immediately struck up long conversations regarding amateur radio activities.

Like most of us he had radio and electronics in his blood, and was devoted to amateur radio.

I am not an active amateur, but my contact with Frank has encouraged me to finish my regulations and get my licence.

Frank was an active member of the WIA for many years and will be missed by fellow enthusiasts, friends and family.

Ken Jones
WIA Member 294764

Brian Powell VK2AIZ

It is with great sadness we record the passing of Brian Powell VK2AIZ on 12 September 1998.

Brian had battled cancer for the past eighteen months but, regrettably, this has now taken him from us. However, despite the obvious difficulties he experienced throughout this period, Brian always remained cheerful and positive, and maintained an active interest in his hobby.

The way in which Brian faced up to his circumstances and never complained of his fate, not only set an example that would be difficult to follow but was also an example of a man who held a deep faith and belief in his maker.

As a radio amateur, Brian had an inquisitive and inventive streak. He was keenly interested in "home brew", QRP in particular. His shack

bears testimony to his belief in a simple, practical approach to the hobby.

Born on 16 July 1930 in London, Brian was first licensed in 1950 as G3HMZ, following a schoolboy interest in crystal sets, obtaining his licence whilst serving as a conscript in the RAF. He emigrated to Melbourne in 1951 and held the callsign VK3AMZ, moving to Sydney in 1957 and his call of VK2AIZ.

Brian actively participated in the activities of the hobby and a number of radio clubs. At the time of his death he was a member of the Hornsby and Districts Club, Westlakes, the Radio Amateur Old Timers, and the WIA.

His friendship, cheery personality and the willing support he gave to his fellow amateurs will be missed by all who knew him.

To his family we extend our sincere sympathy.

John Bishop VK2ZOI
President
Hornsby and Districts Amateur Radio Club Inc

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Mega-Caps

There are at least three companies in the world who are developing very large capacitors for energy storage. These are Evans Capacitor in the USA, Asahi Glass in Japan, Elna Capacitors, and a company in Australia funded by a CSIRO grant.

The Australian company has so far developed a capacitor of 8000 farads at 2.5 V. This capacitor is the size of a small milk carton but due to the method of construction can be in any shape. In the future this type of capacitor will be used for storing bulk energy for use in either emergency situations such as motors and pumps during a power failure, or perhaps a building fire, or for solar powered devices where power is required overnight in remote areas.

The capacitor is based on a form of carbon with an organic insulator. The capacitors can be connected in series to obtain higher voltages but the dielectric cannot be stressed over 2.5 V. This means that care must be taken when charging capacitors in series.

However, they can be charged or discharged at extremely high currents and a short will not cause any damage.

Allan Doble VK3AMD

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WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers	News Broadcasts	1998 Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Secretary Treasurer	Hugh Blemings John Woolner Les Davey	VK1YYZ VK1ET VK1LD 3.570 MHz LSB, 146.950 MHz FM each Sunday evening commencing at 8.00 pm local time. The broadcast text is available on packet, on Internet aus.radio.amateur.misc newsgroup, and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Secretary Treasurer Web: http://ozemail.com.au/~vk2wii/ e-mail address: vk2wi@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz	Michael Corbin Eric Fossey Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00)	VK2YC VK2EFY VK2KUR From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.170, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1273.500 (* morning only) with relays to some of 18.120, 21.170, 581.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio.	(F) \$69.00 (G) (S) \$56.00 (X) \$41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298	President Secretary Treasurer e-mail address: vk3w@rint.com.au Web: http://www.tbsa.com.au/~wivvic/	Jim Linton Barry Wilton Rob Hailey (Office hours Tue & Thur 0830-1530)	VK3PC VK3XV VK3NC VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 3221 9377	President Secretary Treasurer e-mail: secretary@wiaq.powerup.com.au Web: http://www.wiaq.powerup.com.au	Colin Gladstone Peter Harding Alistair Eirick	VK4ACG VK4JPH VK4FTL 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463	President Assistant Secretary Treasurer Web: http://www.vk5wia.ampr.org/	Ian Hunt Graham Wiseman Joe Burford	VK5QX VK5EU VK5UJ 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) \$75.00 (G) (S) \$61.00 (X) \$47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	President Secretary Treasurer Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au	Cliff Bastin Christine Bastin Bruce Hedland-Thomas	VK6LZ VK6ZLZ VK8OO 146.700 FM(R), 438.525 FM(R), 29.120 FM at 0930 and 1900 hrs Sundays from Perth, relayed (morning only) on 1.825, 3.560, 3.582 (Busselton), 7.075, 14.116 (North), 14.175 (East), 21.185, 50.150; (morning and evening) 146.900(R) Mt William (Bunbury), 147.00(R) Katanning, 147.200(R) Cataby, 147.250(R) Mt Saddleback (Boddington), and 147.350(R) Busselton; (evening only) 1.865, 3.564 MHz.	(F) \$62.00 (G) (S) \$50.00 (X) \$34.00
VK7 Tasmanian Division 24 Targett Street Scamander TAS 7250 Phone 03 6372 5305	President Secretary Treasurer Web: http://www.wia.tasnet.net e-mail: vk7kpg@hamnet.hotnet.com.au	Ron Churcher Paul Godden John Klop	VK7RN VK7KPG VK7KCC 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) \$74.00 (G) (S) \$60.00 (X) \$46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				

Note: All times are local. All frequencies MHz.

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